APPENDIX C

Biological Resources Report



Pure Water San Diego Program

Biological Constraints Report

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Pure Water San Diego Program Biological Constraints Report

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1.0 INTRODUCTION

The City of San Diego (City) and its regional partners face significant issues with water supply and wastewater treatment. Currently, 85 percent of the region's water supply is imported, and the City's Point Loma Wastewater Treatment Plant (Point Loma WWTP) operates under a Clean Water Act (CWA) Section 301(h) modified National Pollutant Discharge Elimination System permit that allows discharge of wastewater without full secondary treatment. The current permit expires July 30, 2015, and the City is working with the Environmental Protection Agency and local environmental organizations to secure renewal. Development of a water reuse program is a necessary component of the City's negotiations for permit renewal. Potable reuse of treated wastewater would reduce the region's dependence on imported water, and reduce flows to the Point Loma WWTP which would reduce total suspended solids discharged.

The Pure Water San Diego Program (Pure Water Program) is the City Public Utilities Department-proposed program to provide a safe, secure, and sustainable local drinking water supply for San Diego. The Pure Water Program consists of the design and construction of new advanced water purification facilities (AWPFs), wastewater treatment facilities, pump stations, and pipelines. When completed, the Pure Water Program will provide up to 83 million gallons per day (mgd) of locally-controlled water.

HELIX Environmental Planning, Inc. (HELIX) has prepared this constraints analysis to provide biological resources data to the City for the drafting of a Program Environmental Impact Report (PEIR) for the Pure Water Program. This analysis is intended to provide baseline data on biological resources in the Pure Water Program proposed project alignment sufficient to address the following questions:

- 1. Would the proposed Pure Water Program result in impacts to a sensitive habitat or sensitive natural community as identified in local, regional, state, or federal plans, policies, or regulations?
- 2. Would the proposed Pure Water Program result in an impact on City, state, or federally regulated wetlands through direct removal, filling, hydrological interruption or other means?
- 3. Would implementation of the proposed Pure Water Program result in a reduction in the number of any unique, rare, endangered, sensitive, or fully protected species of plants or animals?
- 4. Would the proposed Pure Water Program result in interference with the movement of any native resident or migratory wildlife through linkages or wildlife corridors?
- 5. Would the proposed Pure Water Program conflict with provisions of adopted local habitat conservation plans or policies protecting biological resources?
- 6. Would the proposed Pure Water Program introduce land uses within or adjacent to the Multi-Habitat Planning Area (MHPA) that would result in adverse edge effects?



7. Would the proposed Pure Water Program introduce invasive species into natural or open space areas?

The constraints analysis evaluated potential direct impacts to biological resources in a 1,000-foot wide study corridor identified by the City for proposed pipelines and a 300-foot study area around proposed facilities. Potential indirect impacts to sensitive wildlife species and preserves were evaluated in a 0.5-mile corridor around proposed pipelines and facilities. The constraints analysis also includes quantification of potential preserve boundary adjustments that may be required for project implementation, regulatory requirements, and potential impact avoidance recommendations.

1.1 PROJECT LOCATION

The Pure Water Program includes facilities located throughout San Diego County in a number of jurisdictions (Figure 1). While the majority of proposed facilities are in the City, some are located in the County of San Diego (County) and the Cities of Chula Vista, El Cajon, La Mesa, and Santee (Figure 2). The Pure Water Program also includes reservoir augmentation at two City-owned and operated reservoirs outside of the City limits: San Vicente Reservoir and Otay Reservoir.

1.2 PROJECT DESCRIPTION

The Pure Water Program is a 20-year, phased program that involves planning, design, and construction of new AWPFs, wastewater treatment facilities, pump stations, and pipelines. These activities will require property and easement acquisition, discretionary permit processing, and significant public education and community engagement. The goal of the Pure Water Program is to produce 15 mgd of purified water by 2023, 30 mgd by 2027, and 83 mgd by 2035.

The Pure Water Program is generalized into 3 major components: North City Area, South Bay Area, and Central Area. The North City component would include expansion of the existing North City Water Reclamation Plant (North City Plant), construction of a new full-scale AWPF adjacent to the North City Plant, pipelines, and support facilities such as pump stations. The purified water produced at the North City AWPF would be piped to San Vicente Reservoir where it would blend with raw water in the reservoir. The North City Plant's water reclamation capacity could be increased through improvements to treat up to 50 mgd, which in turn would yield an annual average of 30 mgd of purified water from the AWPF and 10 mgd of recycled water for non-potable use.

The South Bay component of the Pure Water Program would include improvements to the South Bay Plant to increase water reclamation capabilities from its current design capacity of 15 mgd to 44 mgd, installation of a new pump station and pipeline to convey additional wastewater to the plant, construction of a new South Bay AWPF, and construction of a conveyance system to deliver purified water to the Otay Reservoir. The South Bay component would be capable of treating up to 28 mgd annual average daily flow (AADF) of wastewater and producing up to 15 mgd AADF of purified water and 9 mgd AADF of non-potable reuse.





Regional Location Map

PURE WATER

HELIX 0 4 Environmental Planning 4 Miles

Figure 1



Project Location

PURE WATER

HELIX 0 3 Environmental Planning Miles

Figure 2

The Central Area component would include construction of two interrelated facilities: a new water reclamation facility (Central Area Plant) and AWPF. The Central Area Plant is proposed at Harbor Drive near the convergence of the North and South Metro Interceptors and PS2, which carry all of the flows that are conveyed to the Point Loma WWTP. Wastewater flows from PS2 would be diverted to the water reclamation facility to produce reclaimed water. A brine pipeline would be required to transport materials from the Central Area AWPF to downstream of the Central Area Plant site. A third pipeline would then convey solids from the water reclamation facility to the Point Loma WWTP. A 38- to 53-mgd total reduction in flow from the Point Loma outfall is possible with this Central Area component.

In addition, advanced water treatment processes would occur at each purified water treatment facility and would be designed to incorporate a significant degree of treatment redundancy. The purified water treatment facilities would also include real-time monitoring systems, short-term on-site storage, and automated controls to divert any treated purified water that does not meet municipal supply specifications. These quality control features should ensure that any purified water conveyed off site meets applicable municipal water supply specifications. As an added safety feature, however, purified water conveyance facilities would be designed to allow for diversion of any water within the purified conveyance system that is suspected of not complying with drinking water specifications (off-spec water) prior to the water reaching its reservoir destination to a nearby sewer, storm drain, or surface water.

Two potential failure modes may require such a diversion of off-spec water from purified conveyance facilities. The first failure mode involves an immediately detectable and correctable purified water treatment issue (such as a short-term failure of monitoring sensors) that could potentially result in a limited amount of purified water being introduced to the conveyance system that has not been fully verified as meeting standards. The second failure mode involves some form of failure (e.g. pipeline break, comprehensive equipment failure, or natural disaster) that is not immediately correctable, and requires temporary shutdown of purified water treatment and conveyance operations. Under either of these failure modes, off-spec water may be introduced into the purified water conveyance system that cannot be feasibly returned to the purified water treatment facility or diverted to the non-potable "purple pipe" recycled water system. To address these circumstances, two potential downstream diversion options would be considered to provide the ability to divert conveyance system flow prior to off-spec waters reaching a potable water reservoir (e.g., San Vicente and Otay Reservoirs); the off-spec water would be sent to the sewer system and/or be discharged into nearby waterways.

2.0 METHODS

HELIX conducted a desktop biological constraints analysis to assist in the drafting of a PEIR for the Pure Water Program. The desktop analysis relied on available data and other information from internal and external sources. No field surveys were conducted. HELIX overlaid biological resources data and project design files provided by the City using Geographic Information Systems (GIS) onto recent aerial imagery. The study area was defined as 0.5 mile around the proposed project facilities and pipeline alignments; impact analysis was limited to a 1,000-footwide area identified by the City for the proposed pipeline alignments and 300 feet of other



proposed facilities. Potential indirect impacts to sensitive wildlife species and preserves were evaluated in a 0.5-mile corridor around proposed pipelines and facilities. This analysis expands on the initial Pure Water Program constraints analysis report provided to Brown & Caldwell by HELIX on March 28, 2014, and reflects changes to the proposed Pure Water Program since that time.

The biological resources data used by HELIX to identify potential biological constraints within the study area are listed in Table 1.

Table 1 SENSITIVE BIOLOGICAL RESOURCES DATA USED FOR CONSTRAINTS ANALYSIS			
USED FOR CONSTRAINTS ANALISIS			
ALPHA CODE	DATA	GENERAL DESCRIPTION	
CDFW-ER	California	Areas designated as California wildlife refuge and	
	Department of Fish	considered 100 percent conserved.	
	and Wildlife		
	(CDFW) Ecological		
	Reserve		
CNDDB	California Natural	Known locations of sensitive habitats and species	
	Diversity Data Base	with various levels of sensitivity based on statewide	
	(CNDDB) Species	database.	
	Records		
MHPA	Multi-Habitat	City Multiple Species Conservation Program	
	Planning Area	(MSCP) Preserve.	
	(MHPA)		
MSCP	MSCP	Areas included within the adopted Subregional Plan	
		for San Diego County.	
MSCP-HP	MSCP Hardline	County MSCP Subarea Plan Preserved areas.	
	Preserve		
PAMA	Pre-Approved	County MSCP Subarea Plan areas targeted for	
	Mitigation Area	preservation.	
GANDIOG	(PAMA)		
SANBIOS	SanBIOS Species	Known locations of sensitive species with various	
	Records	levels of sensitivity based on local database for San	
	0 D'	Diego County.	
SANDAG-VD	San Diego	Regional data on the type and distribution of	
	Association of	vegetation communities within San Diego County.	
	Governments		
	(SANDAG)		
	Vegetation Data	City inventory of some large large late 1 in 2000	
SD-VPI	City of San Diego	City inventory of vernal pools updated in 2008.	
	vernal pool		
1	L III VENIORV		

Table 1 (cont.) SENSITIVE BIOLOGICAL RESOURCES DATA USED FOR CONSTRAINTS ANALYSIS			
ALPHA CODE	DATA	GENERAL DESCRIPTION	
USFWS-CH	U.S. Fish and Wildlife Service (USFWS) Critical Habitat	Land designation that delineates areas whereby the USFWS has formally designated habitat that is critical to the survival of species listed under the Endangered Species Act (ESA)	
USFWS-NWI	USFWS National Wetlands Inventory (NWI)	Areas where major water bodies, lakes, rivers, streams, and associated wetland and riparian habitat have been identified by the USFWS and other agencies.	
USFWS-NWR	USFWS National Wildlife Refuge (NWR)	Areas designated as federal wildlife refuge and considered 100 percent conserved.	
USFWS-TE	USFWS Species Records	Known locations of sensitive plant and animal species listed under the ESA based on a national database inventory.	
USGS-TOPO	U.S. Geological Survey (USGS) Topographic Maps	USGS topographic map layer. This layer is scalable and therefore not at a fixed scale, nor separated into 7.5-minute quadrangles.	

3.0 REGULATORY SETTING

3.1 ENVIRONMENTAL REGULATION

Overall regulation of project impacts to environmental quality is provided at the federal level by the National Environmental Policy Act (NEPA) and at the state level by the California Environmental Quality Act (CEQA). These acts require analysis and disclosure of all potential impacts to the quality of the human environment, including biological resources, for all discretionary actions. Under CEQA, potential impacts must be classified as no impact, less than significant, less than significant with mitigation, or potentially significant. Mitigation for potential impacts can include both avoidance and compensation. NEPA applies to all actions on federal lands outside state jurisdiction, such as Marine Corps Air Station (MCAS) Miramar and the San Diego Bay NWR, while CEQA applies to actions on all lands under state jurisdiction.

3.2 WETLANDS AND WATERS

3.2.1 Federal Wetland Regulation

Federal wetland regulation applicable to the Pure Water Program is guided by the Clean Water Act (CWA). The purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of all Waters of the U.S. (WUS). Permitting for projects filling WUS (including wetlands) is overseen by the U.S. Army Corps of Engineers (USACE) under Section



404 of the CWA. Projects are typically permitted on an individual basis or are covered under one of several approved general or Nationwide Permits. In addition, under Section 401 of the CWA, an applicant for a federal permit for an activity that may result in a discharge to a water body must obtain certification from the state that the proposed activity will comply with state water quality standards and water quality objectives. Section 401 provides the Regional Water Quality Control Board (RWQCB) with regulatory authority to certify or deny the proposed activity. A Section 401 Certification must be obtained from the RWQCB prior to issuance of a 404 Permit by the USACE.

3.2.2 State Wetland Regulation

The CDFW exercises jurisdiction over waters of the State under Sections 1600-1616 of the California Fish and Game Code (FGC) based on the definition of regulated activity provided in Section 1602 of the FGC and the definition of a stream provided in Title 14 §1.72 of the California Code of Regulations.

Section 1602 of the FGC states: "An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake..." without notifying CDFW. Title 14 §1.72 of the California Code of Regulations defines a stream as: "...a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation." This definition includes a broad range of vegetation communities, including some that do not contain wetland species but are in a riparian landscape position. CDFW jurisdiction typically extends to the outer limit of riparian vegetation, or to the top of bank of an unvegetated stream channel.

Under Section 1603 of the FGC, upon notification, CDFW "...shall determine whether the activity may substantially adversely affect an existing fish and wildlife resource." If such a determination is made, CDFW reaches an agreement with the notifying entity (a Streambed Alteration Agreement) that includes measures to protect the resources CDFW has determined the activity may substantially adversely affect.

The California Coastal Commission (CCC) exercises jurisdiction over wetlands and waters in the coastal zone under the California Coastal Act (CCA). The coastal zone varies in width from a few hundred feet to several miles, and the CCC can take jurisdiction over actions far inland if they are deemed to have significant effect on coastal waters.

3.2.3 Local Wetland Regulation

The County requires avoidance of wetlands as defined by the Resource Protection Ordinance (RPO) except when the impacts cannot be avoided, such as for a required road access. The County also requires buffer zones around RPO wetlands. The buffer zone around RPO wetlands ranges from a minimum of 50 feet up to 200 feet.

The extent of City wetland jurisdiction is determined based on the City definition of wetland provided in the Environmentally Sensitive Lands (ESL) regulations (City 2012a). The City's Biology Guidelines (City 2012b) and MSCP Subarea Plan require that impacts to wetlands, including vernal pools, shall be avoided, and that a sufficient wetland buffer shall be maintained, as appropriate, to protect resource functions/values. For vernal pools, this includes avoidance of the watershed necessary for the continued viability of the ponding area. Where wetland impacts are unavoidable (determined case-by-case), they shall be minimized to the maximum extent practicable and fully mitigated per the City Biology Guidelines.

3.3 SENSITIVE SPECIES

3.3.1 Federal Sensitive Species Protection

The USFWS takes jurisdiction over species listed as threatened or endangered under the federal ESA. The USFWS also identifies critical habitat for endangered and threatened species. Critical habitat is defined as areas of land that are considered necessary for endangered or threatened species to recover.

Sections 4(d), 7, and 10(a) of the federal ESA regulate actions that could jeopardize endangered or threatened species. Section 7 describes a process of federal interagency consultation for use when federal actions may adversely affect listed species. A biological assessment is required for any major construction activity if it may affect listed species. In this case, take can be authorized via a letter of biological opinion, issued by the USFWS for non-marine related listed species issues. Section 10(a) allows issuance of permits for "incidental" take of endangered or threatened species to non-federal entities. The term "incidental" applies if the taking of a listed species is incidental to and not the purpose of an otherwise lawful activity. Participants in approved Habitat Management Plans such as the MSCP Subregional Plan receive incidental take authorization from USFWS for species covered by the Plan(s) in lieu of a Section 10(a) permit, for actions within the planning area(s).

All migratory bird species that are native to the United States or its territories are protected under the federal Migratory Bird Treaty Act (MBTA) as amended under the Migratory Bird Treaty Reform Act (MBTRA) of 2004 (FR Doc. 05-5127). The MBTA is generally protective of migratory birds but does not actually stipulate the type of protection required and does not include a process for permitting incidental take, nor does it include a component for recovery, designation of critical habitat, or protection of habitat.

3.3.2 <u>State Sensitive Species Protection</u>

The California FGC regulates species listed as threatened or endangered under the California ESA (CESA). The CESA is similar to the ESA in that it contains a process for listing of species and regulating potential impacts to listed species. Section 2081 of CESA authorizes the CDFW to enter into a memorandum of agreement for take of listed species for scientific, educational, or management purposes. Sections 3500 - 3502 of the FGC also provide general protection to all birds, especially raptors.



3.4 MANAGEMENT PLANS AND POLICIES

The Final MSCP (County 1998) covers all of western San Diego County. Individual jurisdictions adopt MSCP Subarea Plans in conformance with the Final MSCP. Once adopted and approved by resource agencies, MSCP Subarea Plans provide individual jurisdictions with incidental take authority for covered species that are adequately protected by their Subarea Plan. Protection for covered species is provided in dedicated preserves. The County, City, and Cities of Chula Vista and La Mesa have adopted MSCP Subarea Plans. The City MSCP Subarea Plan (City 1997a) covers all lands in the City of San Diego, as well as City-owned lands outside of the City limits. The Pure Water Program would not affect any resources in the City of La Mesa covered by the La Mesa MSCP Subarea Plan (City of La Mesa 1998).

The County preserve is made up of Hardline Preserve Areas that have been set aside, and Pre-Approved Mitigation Areas (PAMAs) that are targeted for preservation but where preserve boundaries cannot be definitively established yet. The City preserve is the MHPA, which consists of preserved lands and lands targeted for preservation. The Chula Vista preserve is made up of 100 percent Conserved Areas and 75 percent Conserved Areas. In all three cases, lands are typically conveyed into the preserve as mitigation for impacts in development areas outside the preserve.

The County requires permits for development in unincorporated areas. Sensitive resources in the unincorporated county are covered by the RPO and the County MSCP Subarea Plan (County 1997), which provide protection to sensitive habitats, plants, animals, wetlands, and other biological resources.

The City requires permits for development within its corporate limits. The type of permit required depends on the scale of development and the resources present in the project site. Major development or development of sites that contain sensitive resources requires a Site Development Permit (SDP) and/or a Coastal Development Permit (CDP) for sites inside the coastal overlay zone. Sensitive resources in City jurisdiction are protected by the ESL regulations and include MHPA lands, wetlands, sensitive uplands, habitat for sensitive plants and animals, and steep hillsides.

In March 2015, the City circulated its Preliminary Draft Vernal Pool Habitat Conservation Plan (VPHCP; City 2015). The plan is meant to provide a comprehensive planning approach to preserve vernal pool species and their habitat within the City's jurisdiction. The VPHCP has not been adopted; however, the VPHCP would create a new preserve boundary and updated conditions of coverage for San Diego fairy shrimp (*Branchinecta sandiegonensis*), Riverside fairy shrimp (*Streptocephalus woottoni*), San Diego button celery (*Eryngium aristulatum* var. *parishii*), spreading navarretia (*Navarretia fossalis*), California orcutt grass (*Orcuttia californica*), San Diego mesa mint (*Pogogyne abramsii*), and Otay mesa mint (*Pogogyne nudiuscula*).

MCAS Miramar adopted an Integrated Natural Resources Management Plan (INRMP) in 2011 (MCAS Miramar 2011). The INRMP establishes guidelines for management of natural resources on lands administered by MCAS Miramar. The current INRMP will be updated in 2015.



The San Diego Bay NWR has adopted a Comprehensive Conservation Plan/Environmental Impact Statement (San Diego Bay NWR 2006) that is referenced in this analysis for regulations pertaining to lands in the San Diego Bay NWR.

4.0 EXISTING CONDITIONS

The following section describes the existing biological conditions within the Pure Water Program Area. Figures 3a through 3bb provide the vegetation communities taken from the SANDAG-VD mapping; City of San Diego vernal pool inventory data (SD-VPI); wetlands and riparian habitat identified in the USFWS-NWI; City MHPA lands; and other conserved lands, including CDFW-ER, MSCP-HP, PAMA, and USFWS-NWR. Figures 4a through 4bb provide listed and highly sensitive plant and wildlife species information taken from CNDDB, SANBIOS, and USFWS-TE; designated critical habitat (USFWS-CH); and the boundary of the local jurisdictions. Figures 3a through 4bb also provide the study area. This analysis reflects the best information available at this time.

4.1 GENERAL DESCRIPTIONS OF VEGETATION COMMUNITIES IN THE PURE WATER PROGRAM AREA

The following vegetation communities are shown on SANDAG-VD mapping in the Pure Water Program area. Descriptions and community codes follow Holland (1986) as revised by Oberbauer (1996), Kelly (2006), and Buegge (2008). Communities are organized into wetland/aquatic habitats, sensitive uplands, and non-sensitive uplands. Community codes are provided in parentheses.

4.1.1 Wetland/Aquatic Habitats

Vernal Pool (44000)

Vernal pools are seasonally flooded depressions that support a distinctive community adapted to extreme variation in hydrologic conditions. Vernal pools are distinguished from other seasonal wetlands by: (1) being at least partially vegetated during the normal growing season or being unvegetated due to heavy clay or hardpan soils that do not support plant growth; and (2) the basin contains at least one vernal pool indicator species (e.g., *Psilocarphus* spp., *Downingia cuspidata, Eryngium aristulatum* var. *parishii*, branchiopod crustaceans). In San Diego, vernal pools often retain pooled water for approximately 2 weeks after significant rain events. Hardpan vernal pools occur where an iron silicate hardpan retards downward percolation of water, are typically located on coastal mesas, and are surrounded by chamise chaparral. Claypan vernal pools form where heavy clay soils retain water, are typically surrounded by grassland, and are located on coastal mesas and as far inland as Ramona, Poway, and San Marcos. Vernal pools and many of which are listed as threatened or endangered.

Southern Coastal Salt Marsh (52120)

Southern coastal salt marsh is a low-growing, evergreen community of salt-tolerant species. It occurs along the margins of bays, lagoons, and estuaries, generally within the range of tidal fluctuation. Species are often stratified along an elevation gradient, with alkali-heath (*Frankenia salina*), seablite (*Suaeda spp.*), and pickleweed (*Salicornia pacifica*) at the drier upper margin, beachwort (*Batis maritima*) and fleshy jaumea (*Jaumea carnosa*) at middle elevations, and cordgrass (*Spartina foliosa*) nearest the water. Other characteristic species include salt heliotrope (*Heliotropium curassavicum*), saltgrass (*Distichlis spicata*), and western marsh-rosemary (*Limonium californicum*).

Freshwater Marsh (52400)

Freshwater marsh is dominated by perennial, winter-deciduous, emergent monocots reaching 4 to 5 meters tall and forming a closed canopy. Freshwater marsh forms in quiet sites lacking significant current, with deep, saturated, peaty soils. Characteristic species include cattails (*Typha* spp.) and bulrushes (*Schoenoplectus* spp.).

Southern Riparian Woodland (62500)

Southern riparian woodland is moderately dense woodland dominated by small trees or shrubs, with scattered taller emergent trees. It occurs in major river systems with regular flood scour. Characteristic species include broom baccharis (*Baccharis sarothroides*), western sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii*), willows (*Salix spp.*), and black elderberry (*Sambucus nigra*).

Southern Riparian Forest (61300)

Southern riparian forest is dense riparian forest that cannot be differentiated into a more specific sub-type. It is found along major streams and rivers. Characteristic species are numerous and include western sycamore, Fremont cottonwood, and willows.

Southern Coast Live Oak Riparian Forest (61310)

Southern coast live oak riparian forest is a sub-type of southern riparian forest dominated by coast live oak (*Quercus agrifolia*) with a closed or nearly-closed canopy, and abundant herbaceous understory. It occurs in bottomlands and outer floodplains along larger streams, on rich, fine-grained alluvial soil. Characteristic species include coast live oak, poison oak (*Toxicodendron diversilobum*), California blackberry (*Rubus ursinus*), toyon (*Heteromeles arbutifolia*), wild cucumber (*Marah macrocarpa*), and common eucrypta (*Eucrypta chrysanthemifolia*). This community is distinguished from southern riparian forest by the presence of coast live oak as dominants or co-dominants with willows, Fremont cottonwood, and western sycamore.







- Southern Arroyo Willow Riparian Forest
- Southern Maritime Chaparral
- Southern Mixed Chaparral
- Valley Needlegrass Grassland
- Vernal Pool

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Vegetation, Wetlands, and **Preserve Constraints** PURE WATER SAN DIEGO

Figure 3a

1,000





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MCAS Miramar

Vegetation, Wetlands, and **Preserve Constraints** PURE WATER SAN DIEGO

Figure 3b

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Vegetation, Wetlands, and Preserve Constraints PURE WATER SAN DIEGO

Figure 3e

National Wetland Inventory

MSCP Core and Linkage Non-Native Riparian

Non-Native Grassland

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PURE WATER SAN DIEGO

Figure 3f

Study Area Conserved Lands

National Wetland Inventory

MSCP Core and Linkage \bigcirc

Diegan Coastal Sage Scrub Non-Native Grassland Southern Riparian Woodland

Vegetation, Wetlands, and **Preserve Constraints** PURE WATER SAN DIEGO

Figure 3g

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Conserved Lands

Eucalyptus Woodland Non-Native Grassland

Western San Diego County MSCP Vegetation Mapping

Diegan Coastal Sage Scrub

Diegan Coastal Sage Scrub: Coastal Form

Vegetation, Wetlands, and Preserve Constraints PURE WATER SAN DIEGO

Figure 3k

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Conserved Lands

National Wetland Inventory MSCP Core and Linkage

Vegetation, Wetlands, and **Preserve Constraints** PURE WATER SAN DIEGO

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Potential Facilities

National Wetland Inventory

MSCP Core and Linkage

Point Loma Ecological Conservation Area (PLECA)

Western San Diego County MSCP Vegetation Mapping



Diegan Coastal Sage Scrub



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Wetlands, and **Preserve Constraints** PURE WATER SAN DIEGO

Figure 3s

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Opint Loma Ecological Conservation Area (PLECA)

Western San Diego County MSCP Vegetation Mapping

- Diegan Coastal Sage Scrub
- **Disturbed Habitat**
- Southern Maritime Chaparral



Vegetation, Wetlands, and **Preserve Constraints** PURE WATER SAN DIEGO

Figure 3t

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Diegan Coastal Sage Scrub
 Disturbed Habitat
 Eucalyptus Woodland
 General Agriculture
 Mule Fat Scrub
 Saltpan/Mudflats
 Southern Riparian Woodland



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Vegetation, Wetlands, and Preserve Constraints PURE WATER SAN DIEGO

Figure 3w

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PURE WATER SAN DIEGO

Figure 3x







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- Coastal and Valley Freshwater Marsh
- Diegan Coastal Sage Scrub

Disturbed Habitat

General Agriculture

Non-Native Grassland Non-Native Riparian Non-Native Vegetation Wildflower Field





MSCP Core and Linkage

Wetlands, and **Preserve Constraints** PURE WATER SAN DIEGO

Figure 3z



Study Area Conserved Lands



MSCP Core and Linkage

Eucalyptus Woodland General Agriculture

Western San Diego County MSCP Vegetation Mapping Coastal and Valley Freshwater Marsh

National Wetland Inventory Diegan Coastal Sage Scrub

Non-Native Grassland Non-Native Riparian

Maritime Succulent Scrub

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Vegetation, Wetlands, and **Preserve Constraints** PURE WATER SAN DIEGO

Figure 3aa



Coastal and Valley Freshwater Marsh

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- Quino checkerspot butterfly (USFWS)
- San Diego fairy shrimp (USFWS)
- San Diego fairy shrimp (CNDDB)
- Coastal California gnatcatcher (SANBIOS)

Coastal California gnatcatcher (INRMP)

San Diego button-celery (CNDDB)

San Diego mesa mint (CNDDB)

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and Critical Habitat **Constraints**

PURE WATER SAN DIEGO

Figure 4a



Study Area

- Quino checkerspot butterfly (USFWS)
- San Diego fairy shrimp (USFWS)
- San Diego fairy shrimp (CNDDB)
- Coastal California gnatcatcher (SANBIOS)
- Coastal California gnatcatcher (USFWS)
- Coastal California gnatcatcher (CNDDB)
 - Coastal California gnatcatcher (INRMP)
 - Willowy monardella (CNDDB)
 - Willowy monardella (INRMP)

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Sensitive Species and Critical Habitat **Constraints**

PURE WATER SAN DIEGO

Figure 4b



Study Area

- Quino checkerspot butterfly (USFWS) San Diego fairy shrimp (USFWS) San Diego fairy shrimp (CNDDB) Coastal California gnatcatcher (USFWS)
- Coastal California gnatcatcher (CNDDB)

Coastal California gnatcatcher (INRMP)

- San Diego button-celery (CNDDB)
- San Diego mesa mint (CNDDB)
- Willowy monardella (CNDDB)
- Willowy monardella (INRMP)

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Sensitive Species and Critical Habitat **Constraints**

PURE WATER SAN DIEGO

Figure 4c





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- Least Bell's vireo critical habitat
- Least Bell's vireo (SANBIOS)
- Coastal California gnatcatcher (SANBIOS)
- Coastal California gnatcatcher (USFWS)
- Coastal California gnatcatcher (CNDDB)
- San Diego ambrosia (CNDDB)

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and Critical Habitat **Constraints**

PURE WATER SAN DIEGO

Figure 4f



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Figure 4g









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- Coastal California gnatcatcher critical habitat
- Coastal California gnatcatcher (CNDDB)
- San Diego ambrosia (CNDDB)

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Figure 4k

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い	Study	Area





- Coastal California gnatcatcher (USFWS)
- Coastal California gnatcatcher (CNDDB)

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Figure 4m

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Study Area

- Coastal California gnatcatcher (USFWS)
- Coastal California gnatcatcher (CNDDB)
- Coastal California gnatcatcher (SANBIOS)
- Willowy monardella (CNDDB)







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Quino checkerspot butterfly (USFWS)

Orcutt's spineflower (USFWS)

Orcutt's spineflower (CNDDB)

Western snowy plover (CNDDB)

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and Critical Habitat Constraints

PURE WATER SAN DIEGO

Figure 4s





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Feet



Study Area

- Least Bell's vireo (USFWS)
- Least Bell's vireo (SANBIOS)
- ... Least Bell's vireo (CNDDB)
- Burrowing owl (CNDDB)
 - Quino checkerspot butterfly (SANBIOS)
- Quino checkerspot butterfly (USFWS) Coastal California gnatcatcher (SANBIOS) 😳 Belding's savannah sparrow (CNDDB)
 - California black rail (CNDDB)
 - Western snowy plover (CNDDB)
 - Light-footed clapper rail (CNDDB)
 - Light-footed clapper rail (USFWS)



Sensitive Species and Critical Habitat **Constraints** PURE WATER SAN DIEGO Figure 4w



- Southwestern willow flycatcher (SANBIOS)
 Least Bell's vireo (CNDDB) \bigcirc Light-footed clapper rail (USFWS) Burrowing owl (CNDDB)
- Least Bell's vireo critical habitat
- Coastal California gnatcatcher (CNDDB) c\PROJECTS\S\SDD\SDD-21.20_PureWater\Map\Constraints\Fig4_SpeciesL.mxd SDD-21.20 04/21/15 -EV

• Coastal California gnatcatcher (SANBIOS)

Coastal California gnatcatcher (USFWS)

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PURE WATER SAN DIEGO

Figure 4x



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- Riverside fairy shrimp (USFWS)

 - San Diego fairy shrimp (USFWS)
- San Diego fairy shrimp (CNDDB)
- Coastal California gnatcatcher (USFWS)
- Coastal California gnatcatcher (CNDDB)
- Otay tarplant (SANBIOS) 0
- Otay tarplant (CNDDB)

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Figure 4z



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Figure 4aa





San Diego fairy shrimp (USFWS)

- San Diego fairy shrimp (CNDDB)
- Quino Checkerspot butterfly critical habitat
- \bigcirc Quino checkerspot butterfly (SANBIOS)
 - Quino checkerspot butterfly (CNDDB)
 - Quino checkerspot butterfly (USFWS)
 - Western yellow-billed cuckoo (CNDDB)



Sensitive Species and Critical Habitat **Constraints** PURE WATER SAN DIEGO Figure 4bb

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Feet

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Southern Arroyo Willow Riparian Forest (61320)

Southern arroyo willow riparian forest is a sub-type of southern riparian forest dominated by moderately tall, winter-deciduous trees, primarily arroyo willow (*Salix lasiolepis*). The understory typically consists of shrubby willows. It occurs on frequently flooded lands along rivers and streams. Characteristic species include arroyo willow, Goodding's black willow (*Salix gooddingii*), mugwort (*Artemisia douglasiana*), mule fat (*Baccharis salicifolia*), and stinging nettle (*Urtica dioica*).

Southern Cottonwood-Willow Riparian Forest (61330)

Southern cottonwood-willow riparian forest is a sub-type of southern riparian forest dominated by tall, winter deciduous Fremont cottonwood, arroyo willow, and/or Goodding's black willow. This community is similar to southern arroyo willow riparian forest and also occurs in frequently flooded areas along rivers and streams. Characteristic species are the same as southern arroyo willow riparian forest except that Fremont cottonwood is dominant or co-dominant and western sycamore is common.

Mule Fat Scrub (63310)

Mule fat scrub is a tall, species-poor, herbaceous riparian scrub heavily dominated by mule fat. It is an early-seral community and is succeeded by riparian forest without frequent flooding. Mule fat scrub occurs along intermittent stream channels with coarse soils. Characteristic species include mule fat, narrow-leaved willow (*Salix exigua*), and stinging nettle.

Saltbush Scrub (36110)

Saltbush scrub is a low-growing scrub heavily dominated by one or more species of saltbush (*Atriplex* spp.). In coastal San Diego County, this is most often quail saltbush (*Atriplex lentiformis*), which forms dense, tangled mounds on alkaline soils in marshes and ravines, and on bluffs.

Tamarisk Scrub (63800)

Tamarisk scrub is a weedy near-monoculture of any of several species of highly-invasive species in the genus *Tamarix*. It usually supplants native riparian scrub after major disturbance. Tamarisk scrub occurs along rivers, streams, agricultural ditches, drains, and swales. There is usually little or no herbaceous or shrubby understory, due to deep shade and a thick layer of salty leaf litter.

Non-native Riparian (65000)

Non-native riparian is densely vegetated riparian thickets heavily dominated by non-native invasive species. Characteristic species include palms (*Washingtonia robusta, Phoenix canariensis*), river red gum (*Eucalyptus camaldulensis*), castor bean (*Ricinus communis*), giant reed (*Arundo donax*), pampas grass (*Cortaderia* spp.), Bermuda grass (*Cynodon dactylon*), and beardgrass (*Polypogon* spp.). It occurs along rivers and streams throughout San Diego.



Open Water (64100)

Open water includes marine bays (64120), estuarine (64130), or fresh water (64140) areas that are permanently inundated and support no vegetative cover.

Unvegetated Lakeshore (64200)

Unvegetated floodplain or channel (including lakeshore) is the rocky, gravelly, or sandy fringe of a waterway that exhibits variable water levels or regular deposition or removal of substrate. Vegetative growth is inhibited by either prolonged inundation, or removal or deposition of alluvium on a regular basis. In the case of lakeshore, fluctuating lake levels leave a sandy or rocky fringe that does not support vegetation.

Salt Pan/Mudflat (64300)

Mudflats are coastal wetlands that form when mud is deposited by rivers or tides. They are usually found in sheltered areas such as bays and estuaries. Salt pans are expanses of ground covered by salt and other minerals left behind by evaporating water.

4.1.2 Sensitive Uplands

Southern Maritime Chaparral (37C30)

Southern maritime chaparral is a low-growing, open chaparral dominated by wart-stemmed ceanothus (*Ceanothus verrucosus*) and Del Mar manzanita (*Arctostaphylos glandulosa* ssp. *crassifolia*). It grows on weathered sandstone soils in the coastal fog belt. Characteristic species include wart-stemmed ceanothus, Del Mar manzanita, Encinitas baccharis (*Baccharis vanessae*), summer holly (*Comarostaphylis diversifolia*), Nuttall's scrub oak (*Quercus dumosa*), chamise (*Adenostoma fasciculata*), bushrue (*Cneoridium dumosum*), and mission manzanita (*Xylococcus bicolor*). Most of the indicator species for this community are considered sensitive.

Scrub Oak Chaparral (37900)

Scrub oak chaparral is dense, evergreen chaparral dominated by scrub oak (*Quercus* spp.) with San Diego mountain mahogany (*Cercocarpus minutiflorus*) and mountain mahogany (*C. betuloides*) often sub-dominant. It usually occurs in more mesic sites than coastal sage scrub. Characteristic species include scrub oak, San Diego mountain mahogany, holly-leafed cherry (*Prunus ilicifolia*), spiny redberry (*Rhamnus crocea*), laurel sumac (*Malosma laurina*), and mission manzanita.

Maritime Succulent Scrub (32400)

Maritime succulent scrub is a low-growing, sparse coastal scrub dominated by drought-deciduous shrubs with a large component of stem and leaf succulents. The proportion of cactuses is highest toward the south and inland. It is often on steep slopes on thin, rocky soils. Characteristic species include coastal prickly pear (*Opuntia littoralis*), coastal cholla



(Cylindropuntia prolifera), San Diego sunflower (Bahiopsis laciniata), Shaw's agave (Agave shawii), San Diego barrel cactus (Ferocactus viridescens), California encelia (Encelia californica), California box-thorn (Lycium californicum), and California sagebrush (Artemisia californica).

Coast Live Oak Woodland (71160)

Coast live oak woodland is dominated by coast live oak, with a poorly-developed shrub understory of toyon, laurel sumac, and gooseberry (*Ribes* spp.). The herbaceous understory is typically non-native grasses. It occurs in shaded sites, slopes, and ravines. Other characteristic species include poison oak and black elderberry.

Diegan Coastal Sage Scrub (32500)

Diegan coastal sage scrub is a low-growing, open scrub of drought-deciduous species dominated by California sagebrush, California buckwheat (*Eriogonum fasciculatum*), and black sage (*Salvia mellifera*). Larger shrubs such as laurel sumac and lemonadeberry (*Rhus integrifolia*) are present at low density. Stem and leaf succulents are present but at much lower density than in maritime succulent scrub. Diegan coastal sage scrub occurs in xeric sites such as south-facing slopes and well-drained soils. The coastal form (32510) is more heavily dominated by California sagebrush, while the inland form (32520) is dominated by white sage (*Salvia apiana*). Other characteristic species include deerweed (*Acmispon glaber*), chaparral mallow (*Malacothamnus fasciculatus*), Mojave yucca (*Yucca schidigera*), and chaparral beardtongue (*Keckiella antirrhinoides*).

Diegan Coastal Sage Scrub – Baccharis Dominated (32530)

Baccharis-dominated Diegan coastal sage scrub is similar to Diegan coastal sage scrub but dominated by species in the genus *Baccharis*, rather than California sagebrush. It occurs on disturbed sites and upper terraces of streams, usually on the margins of Diegan coastal sage scrub, or in areas with nutrient-poor soils. Characteristic species include broom baccharis (*Baccharis sarothr*oides), coyote brush (*Baccharis pilularis*), and goldenbush (*Isocoma menziesii*).

Southern Mixed Chaparral (37120)

Southern mixed chaparral is dense scrub up to several meters tall, consisting of evergreen sclerophyllous shrubs. It is often impenetrable and has little or no opening between plants. Southern mixed chaparral grows in more mesic sites than Diegan coastal sage scrub, often on north-facing slopes. Characteristic species include mission manzanita, laurel sumac, chamise, scrub oak, toyon, San Diego mountain mahogany, ceanothus (*Ceanothus* spp.), manzanita (*Arctostaphylos* spp.), and Mojave yucca. Ceanothus and manzanita become more dominant inland.

Chamise Chaparral (37200)

Chamise chaparral is overwhelmingly dominated by chamise, with other species contributing little to cover. Mature stands are dense with little herbaceous understory. It occurs in more xeric



sites than other chaparral communities. Other characteristic species include bush poppy (*Dendromecon rigida*), yerba santa (*Eriodictyon spp.*), manzanita, sugar bush (*Rhus ovata*), Mojave yucca, and white sage.

Non-native Grassland (42200)

Non-native grassland is dense to sparse cover of annual grasses up to 1 meter tall. Showy-flowered native forbs might also be present, especially in areas of lower disturbance. More disturbed areas have a high proportion of non-native forbs. Non-native grassland occurs in areas disturbed by agriculture, grazing, grading, and dumping. Characteristic species include oats (*Avena* spp.), bromes (*Bromus* spp.), fescues (*Festuca* spp.), filaree (*Erodium* spp.), mustards (*Brassica* spp., *Hirschfeldia* spp., *Sisymbrium* spp.), asters (*Centaurea* spp., *Sonchus* spp., *Lactuca* spp., *Cynara cardunculus*), sweet-clover (*Melilotus* spp.), fennel (*Foeniculum vulgare*), and peppergrass (*Lepidium* spp.). Common native annuals include fascicled tarplant (*Deinandra fasciculata*), goldfields (*Lasthenia gracilis*), blue dicks (*Dichelostemma capitata*), and lupines (*Lupinus* spp.). Non-native grassland is considered sensitive in the MSCP because it can provide habitat for native plants and animals and foraging habitat for raptors.

Wildflower Field (42300)

Wildflower field describes an amorphous mix of mostly native, herb-dominated communities notable for conspicuous annual wildflower displays. Dominant species vary among sites and among years. This habitat type occurs in deserts, wet montane meadows, foothill grasslands, and formerly on coastal mesas. Soils are typically sandy and nutrient-poor. Characteristic species in coastal San Diego include goldfields, tidy-tips (*Layia platyglossa*), purple owl's clover (*Castilleja exserta*), California golden poppy (*Eschscholzia californica*), miniature lupine (*Lupinus bicolor*), and cryptantha (*Cryptantha* spp.).

4.1.3 <u>Non-sensitive Uplands / Other Land Uses</u>

Broadleaf-dominated Non-native Grassland (42210)

This community is a sub-type of non-native grassland in which non-native forbs are at greater than 50 percent cover. Typically, it lacks native forbs and indicates a high level of disturbance. Characteristic species include those listed for non-native grasslands, especially mustards, asters, and fennel. This vegetation type provides little or no habitat value for native species.

Eucalyptus Woodland (79100)

Eucalyptus woodland ranges from single-species thickets with little or no understory to individual trees scattered over a well-developed understory. Most often, eucalyptus woodland is a closed canopy of one species with only non-native ground cover in the understory. It occurs in canyons, along roads, and in developed areas. Characteristic species include river red gum, blue gum (*Eucalyptus globulus*), and sugar gum (*Eucalyptus cladocalyx*). Succulent groundcovers such as hottentot-fig (*Carpobrotus edulis*), iceplants (*Mesembryanthemum* spp., *Aptenia* spp.),



and jade plant are often the only understory. Native shrubs found in coastal sage scrub can be present in sparse eucalyptus woodland.

Non-native Vegetation (11000)

Non-native vegetation is characterized by predominantly or exclusively non-native species that have been established through human action but are now growing without irrigation or maintenance. These are usually monocultures of non-native species such as hottentot-fig, wattle (*Acacia* spp.), jade plant, false sandalwood (*Myoporum laetum*), fountain grass (*Pennisetum setaceum*), cape honeysuckle (*Tecoma capensis*), and leadwort (*Plumbago* spp.).

General Agriculture (18000)

General agriculture includes lands that support active agricultural operations, including orchards (18100), nurseries (18200), pastures (18310), and row crops (18320).

Disturbed Land (11300)

Disturbed land is areas that have been heavily disturbed by human activity but retain a soil substrate. Disturbed lands are usually bare, and if vegetated do not support any recognizable vegetation association. Disturbed land is distinguished from non-native grassland and broadleaf-dominated non-native grassland by a lower overall vegetative cover, especially lower cover of non-native grasses. Examples of disturbed land include graded pads, foot paths, dirt parking lots, off-road vehicle trails, construction staging areas, recently graded firebreaks, and heavily grazed pastures. Disturbed lands provide no viable habitat for uses other than dispersal.

Unvegetated Habitat (64000)

This includes eroded bluffs that have no vegetative cover.

Developed Land (12000)

Developed land is land that has been built upon or physically altered such that it no longer naturally supports vegetation. Development includes permanent and semi-permanent structures, pavement, hardscape, and landscaping that requires irrigation. Areas where no natural ground surface is evident due to debris dumping or placement of other materials (e.g., quarries and auto recycling yards) are also considered developed.

4.2 SENSITIVE SPECIES WITH POTENTIAL TO OCCUR IN THE PURE WATER PROGRAMAREA

A total of 103 sensitive species, including 59 plant species and 44 wildlife species, are represented by database occurrence records within 0.5 mile of Pure Water Program potential pipeline alignments or proposed facilities (Appendix A). Of those 103 sensitive species, 50 are covered by the MSCP Subregional Plan and 1 (Quino checkerspot butterfly [*Euphydryas editha quino*]) is covered only by the Chula Vista MSCP Subarea Plan. Conditions of coverage for these



51 species are provided in Appendix B. Sensitive species are those listed under the ESA or CESA, wait-listed under the ESA or CESA, considered Species of Special Concern or Birds of Conservation Concern by state or federal resource agencies, considered Narrow Endemics in the MSCP Subregional Plan, considered sensitive by the County or City, and plants listed on the Inventory of Rare and Endangered Plants of California maintained by the California Native Plant Society (CNPS, Rare Plant Program 2015).

Sensitive species were considered to have high or moderate potential to occur in the Pure Water Program area if they were represented by database occurrence records that reflect current conditions and are located within the 1,000-foot study area. Species represented by occurrence records that are either out of date given existing conditions, or so imprecise as to make the location of the species relative to the proposed Pure Water Program facilities impossible to determine, were considered to have low potential to occur in the Pure Water Program area. An example of the latter is the occurrence record for oil neststraw (*Stylocline citroleum*), which dates from the 1880s, covers an entire USGS quadrangle map area, and represents a species currently known to occur only in Kern County, California. Species with low potential to occur are included in the list of species for each area, but are not included in the analysis for individual components.

4.3 RESOURCES IN THE NORTH CITY AREA

4.3.1 Proposed Facilities in the North City Component

The North City component includes expansion of the existing North City Plant, construction of a new full-scale AWPF adjacent to the North City Plant, pipelines, and support facilities such as pump stations. The purified water produced at the North City AWPF would be piped to San Vicente Reservoir where it would blend with raw water in the reservoir.

In order to continue serving existing non-potable recycled water customers, design of the AWPF would account for the seasonal demands of non-potable recycled water, operating at the design capacity of 18 mgd purified water in winter when non-potable recycled water demands are lowest, and operating at a reduced production of purified water in summer when non-potable recycled water demands are highest. The North City Plant's water reclamation capacity could be increased to treat up to 50 mgd, which in turn would yield an annual average of 30 mgd of purified water from the AWPF and 10 mgd of recycled water for non-potable use.

The new AWPF would be located on the vacant City-owned lot across Eastgate Mall Road to the north of the North City Plant. A pipe gallery/access tunnel under Eastgate Mall Road would connect the North City Plant to the new AWPF.

New pump stations and pipeline would be needed to convey the purified water produced at the North City AWPF to the San Vicente Reservoir, which is approximately 25 miles to the east of the AWPF. One pump station would be located on the proposed North City AWPF site. The purified water pipeline, anticipated to be approximately 48 inches in diameter, would head in a southerly direction from the proposed North City AWPF before heading east to the San Vicente Reservoir. The pipeline would travel through Kearny Mesa and Tierrasanta (communities within the City of San Diego), the City of Santee, the community of Lakeside, and unincorporated areas



of County of San Diego. Additional pump stations would be located along the pipeline alignment as needed.

A new wastewater force main and brine pipeline connecting the North City Plant to the new Morena Boulevard pump station would be required to transfer wastewater to the treatment facility and brine from the North City AWPF back to the sewer system.

In summary, the North City component includes the following proposed facilities:

- 1. An AWPF (AWPF-NC) north of Eastgate Mall at Interstate (I-) 805;
- 2. Upgrades to the North City Water Reclamation Plant (North City Plant);
- 3. Pump stations;
- 4. A wastewater forcemain and brine pipeline (WFBP) that would run south from the North City Plant through undeveloped lands within MCAS Miramar;
- 5. A wastewater forcemain (WF-NC) connecting the North City Plant to the new Morena Boulevard pump station;
- 6. A purified water pipeline (PWP-NC) connecting the North City Plant to San Vicente Reservoir; and
- 7. A reservoir outfall/discharge structure (ROD-NC) at San Vicente Reservoir.

Land uses surrounding the North City Area component include:

- Residential and commercial development;
- Freeways and road arteries;
- Montgomery Field;
- Miramar Landfill;
- Open Space in Mission Trails Regional Park, Marian Bear Memorial Park, Tecolote Canyon Natural Park, Mission Bay Park, San Diego River Park, San Vicente Reservoir Cornerstone Lands, Oak Oasis Open Space Preserve, Louis A. Steltzer Park, San Diego River Ecological Reserve, and the San Diego River Flood Control Channel;
- Miramar National Cemetery; and
- MCAS Miramar.

4.3.2 Habitats and Land Covers in the North City Component

Habitat types and land covers mapped for the MSCP and as part of MCAS Miramar's INRMP within the study area for North City component proposed facilities include:

Wetland/Riparian

- Vernal pools
- Vernal marsh
- Freshwater marsh
- Southern riparian woodland
- Southern riparian forest
- Riparian forest
- Southern arroyo willow riparian forest
- Southern cottonwoodwillow riparian forest
- Southern coast live oak riparian forest
- Mule fat scrub
- Non-native riparian
- Open water
- Unvegetated lakeshore

Sensitive Upland

- Southern maritime chaparral
- Scrub oak chaparral
- Maritime succulent scrub
- Coast live oak woodland
- Diegan coastal sage scrub
- Coastal sage scrub
- Chamise chaparral
- Southern mixed chaparral
- Chaparral
- Coastal sage/chaparral
- Non-native grassland

Non-Sensitive Upland

- Eucalyptus woodland
- Non-native vegetation
- Broadleaf-dominated non-native grassland
- Developed lands
- Disturbed lands
- Unvegetated habitat (eroded bluffs)

4.3.3 Special-status Species in the North City Component

The following sensitive species are represented by database occurrence records within 0.5 mile of the North City component.

Animals	
Invertebrates	
San Diego fairy shrimp (<i>Branchinecta</i> sandiegonensis) monarch butterfly (<i>Danaus plexippus</i>)	Quino checkerspot butterfly (<i>Euphydryas</i> editha quino)
Reptiles	
coast horned lizard (Phrynosoma blainvillei)	Orange-throated whiptail (Aspidoscelis hyperthyra beldingi)
coastal whiptail (<i>Aspidoscelis tigris</i> stejnegeri)	red diamond rattlesnake (Crotalus ruber)
Coronado Island skink (Plestiodon	two-striped garter snake (Thamnophis
skiltonianus interparietalis)	hammondii)
Birds	
Belding's savannah sparrow (<i>Passerculus</i> sandwichensis beldingi)	Cooper's hawk (Accipiter cooperi)
California least tern (<i>Sternulla antillarum</i> browni)	least Bell's vireo (Vireo bellii pusillus)

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Animals (cont.)	
Birds (cont.)	
coastal California gnatcatcher (<i>Polioptila californica californica</i>)	prairie falcon (Falco mexicanus)
coastal cactus wren (Campylorhynchus	southern California rufous-crowned sparrow
bruneicapillus)	(Aimophila ruficeps canescens)
Mammals	
American badger (Taxidea taxus)	pocketed free-tailed bat (Nyctinomops femorosaccus)
big free-tailed bat (Nyctinomops macrotus)	San Diego black-tailed jackrabbit (<i>Lepus californicus bennettii</i>)
Mexican long-tongued bat (<i>Choeronycteris mexicana</i>)	San Diego desert woodrat (<i>Neotoma lepida intermedia</i>)
mule deer (<i>Odocoileus hemionus fuliginata</i>) pallid bat (<i>Antrozous pallidus</i>)	western yellow bat (Lasiurus xanthinus)
Plants	
California adolphia (Adolphia californica)	prostrate vernal pool navarretia (<i>Navarretia prostrata</i>)
Coulter's goldfields (<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>)	purple stemodia (Stemodia durantifolia)
chaparral ragwort (Senecio aphanactis)	San Diego ambrosia (Ambrosia pumila)
coast woolly-heads (<i>Nemacaulis denudata</i> var. <i>denudata</i>)	San Diego barrel cactus (<i>Ferocactus viridescens</i>)
decumbent goldenbush (<i>Isocoma menziesii</i>	San Diego button-celery (<i>Eryngium</i>
delicate clarkia (<i>Clarkia delicata</i>)	San Diego goldenstar (<i>Bloomeria</i> clevelandii)
estuary seablite (Suaeda esteroa)	San Diego mesa mint (<i>Pogogyne abramsii</i>)
Lakeside ceanothus (Ceanothus cyaneus)	San Diego thornmint (<i>Acanthomintha ilicifolia</i>)
Nuttall's scrub oak (Quercus dumosa)	singlewhorl burrobrush (Ambrosia monogyra)
Nuttall's lotus (Acmispon prostrata)	summer holly (<i>Comarostaphylis diversifolia</i> ssp. <i>diversifolia</i>)
oil neststraw (Stylocline citroleum)	variegated Dudleya (Dudleya variegata)
Orcutt's Brodiaea (Brodiaea orcuttii)	wart-stemmed ceanothus (<i>Ceanothus verrucosus</i>)
Palmer's grapplinghook (<i>Harpagonella palmeri</i>)	willowy monardella (Monardella viminea)



4.3.4 Designated Critical Habitat in the North City Area Component

The North City Area component includes USFWS-CH for the following listed species:

- San Diego fairy shrimp in the southeast corner of Montgomery Field;
- Coastal California gnatcatcher north of Mast Boulevard in Carlton Hills;
- San Diego ambrosia along West Hills Parkway between Mission Gorge Road and SR 52; and
- Least Bell's vireo north of Mission Gorge Road at Jackson Drive, the San Diego River at West Hills Parkway, and the San Diego River in and east of Carlton Oaks Country Club.

4.3.5 Jurisdictional Waters in the North City Component

The study area for the North City component includes aquatic and riparian resources potentially regulated by federal, state, and local agencies. These resources include wetlands and waters mapped in the NWI and riparian vegetation. Aquatic resources mapped in the NWI in the North City component include freshwater emergent wetland (including vernal pool), freshwater forested/shrub wetland, riverine, estuarine and marine deepwater, freshwater pond, and lake. Blue line streams not mapped in the NWI but shown on USGS maps also occur in the North City component. Wetland and riparian vegetation types mapped in the North City component include vernal pool, freshwater marsh, southern riparian woodland, southern riparian forest, southern arroyo willow riparian forest, southern cottonwood-willow riparian forest, southern coast live oak riparian forest, mule fat scrub, non-native riparian, open water, and unvegetated lakeshore.

4.3.6 Wildlife Corridors and Linkages in the North City Component

The study area for the North City component includes MSCP core areas associated with MCAS Miramar and adjacent lands east of I-805 (Kearny Mesa), San Clemente and Rose Canyons, Mission Trails Regional Park, East Elliott/Santee, and San Vicente Reservoir. Linkages within the North City Area component include portions of the San Diego River, Montgomery Field, and Mission Bay.

4.3.7 Preserved Lands in the North City Component

The study area for the North City component includes lands preserved by the City, County, CDFW, City of Santee, and private landowners. City preserved lands include Marian Bear Memorial Park, Tecolote Canyon Natural Park, Mission Trails Regional Park, San Diego River Park, Tierrasanta Open Space, Rancho Mission Canyon, San Diego River Flood Control Channel, and San Vicente Reservoir Cornerstone Lands. County preserved lands include Mission Trails Regional Park. Lands preserved by CDFW include the San Diego River Ecological Reserve. City of Santee preserved lands include the San Diego River Park. Private preserved lands in the North City component include Homeowners Associations (HOAs) at The Trails in Mission Gorge, Sentry Storage LLC at Eastgate Mall, private homeowners in Santee and Lakeside, and portions of the San Diego River Park preserved by the Environmental Trust.



The North City component includes lands inside the City's MHPA. These lands include the preserved lands listed above, and additional lands including east of I-805 between Eastgate Mall and Nobel Drive, San Clemente Canyon at Copley Drive and Hickman Field Drive, Serra Mesa Recreation Center, portions of Montgomery Field, and in central Tierrasanta south of Tierrasanta Boulevard.

The North City component includes lands in the County's MSCP area. MSCP lands are categorized as follows: (1) Take Authorized Areas approved for development; (2) PAMA approved for conservation as mitigation for impacts elsewhere and targeted for preservation, and known to support sensitive resources; and (3) Hardline Preserve areas already preserved or with sufficient planning to accurately draw future preserve boundaries, which are known to support sensitive resources. The North City Area component includes MSCP Hardline Preserve and PAMA lands in the San Diego River in Lakeside, in San Vicente Creek, and between the proposed pump station at Moreno Avenue and the ROD-NC.

4.4 RESOURCES IN THE CENTRAL AREA

4.4.1 <u>Proposed Facilities in the Central Area Component</u>

The Central Area component includes construction of two interrelated facilities: a new water reclamation facility (Central Area Plant) and AWPF. The Central Area Plant is proposed at Harbor Drive near the convergence of the North and South Metro Interceptors and PS2, which carry all of the flows that are conveyed to the Point Loma WWTP. Wastewater flows from PS2 would be diverted to the water reclamation facility to produce reclaimed water. The basic elements of the Central Area Plan would be generally similar to those of existing water reclamation plant.

The Central Area AWPF would be located in Mission Valley and would produce between 38 and 53 mgd of purified water.

Pipelines would be built that deliver the purified water from the Central Area AWPF to the San Vicente Reservoir. The proposed alignment would be a 48- to 60-inch-diameter pipeline from the Central Area AWPF that would head northeast to connect with the 48-inch-diameter purified water pipeline from the North City AWPF near SR 67 in the community of Lakeside. From the point of connection, the pipeline would transition to 60 inches in diameter and would follow the proposed alignment described above under the North City component. A brine pipeline would be required to transport materials from the Central Area AWPF to downstream of the Central Area Plant site. A third pipeline would then convey solids from the water reclamation facility to the Point Loma WWTP. A 38- to 53-mgd total reduction in flow from the Point Loma outfall is possible with this Central Area component.

In summary, the Central Area component includes the following proposed facilities:

• A water reclamation or AWPF (WR/AWPF-CC-HD) located on developed land at Harbor Drive west of Lindbergh Field;



- A sludge pipeline (SP) connecting the WP/AWPF-CC-HD to the Point Loma WWTP;
- Pump station or AWPF (AWPF-CC-MV) located on undeveloped land in Mission Valley;
- A pipeline (P-CC) connecting the proposed WP/AWPF-CC-HD to the proposed pump station/AWPF-CC-MV in Mission Valley;
- A purified water pipeline (PWP-CC) connecting the pump station/AWPF-CC-MV to the PWP-NC; and
- Additional pump stations.

The Central Area component would be located in developed areas except for lands on Naval Base Point Loma, undeveloped land in urbanized areas at the AWPF-CC-MV site and Lake Murray Boulevard pump station site, and scattered points along the PWP-CC where the alignment crosses open space in the San Diego River, Navajo Canyon, and Mission Trails Regional Park near Lake Murray Dam. Except for those areas, and some minor deviations in other pipeline alignments, all proposed facilities in the Central Area component are situated on developed or disturbed land and/or along existing paved streets.

Land uses surrounding the Central Area component include:

- Residential and commercial development;
- Transportation arteries including I-805, I-15, I-8, I-5, SR 163, SR 67, Friars Road, Lake Murray Boulevard, Navajo Road, and Fletcher Parkway;
- Lindbergh Field;
- Marine Corps Recruit Depot San Diego and Naval Base Point Loma;
- Cabrillo National Monument;
- Harbor Island and Shelter Island Marinas;
- Open Space in Sunset Cliffs Park, Presidio Park, San Diego River Park, Navajo Canyon, Mission Trails Regional Park, Hillside Park in El Cajon, and the San Diego River Flood Control Channel; and
- Lake Murray.

4.4.2 Habitats and Land Covers in the Central Area Component

Habitat types and land covers within the study area for Central Area component proposed facilities include:

Wetland/Riparian

- Freshwater marsh
- Southern riparian woodland
- Southern arroyo willow riparian forest
- Southern cottonwoodwillow riparian forest
- Non-native riparian
- Open water

Sensitive Upland

- Southern maritime chaparral
- Maritime succulent scrub
- Diegan coastal sage scrub
- Non-native grassland

Non-Sensitive Upland

- Eucalyptus woodland
- Non-native vegetation
- Developed lands
- Disturbed lands
- Unvegetated habitat (eroded bluffs)

4.4.3 Special-status Species in the Central Area Component

The following special-status species are represented by database occurrence records within 0.5 mile of the Central Area component.

Animals

Invertebrates Quino checkerspot butterfly

western beach tiger beetle (*Cicendela latesignata latesignata*) **Reptiles** coast horned lizard **Birds** American peregrine falcon (*Falco peregrinus anatum*) California least tern coastal cactus wren coastal California gnatcatcher

Mammals

American badger big free-tailed bat

Mexican long-tongued bat pallid bat

western tidal-flat tiger beetle (*Cicindela gabbii*)

Orange-throated whiptail

least Bell's vireo

prairie falcon southern California rufous-crowned sparrow western snowy plover (*Charadrius alexandrinus nivosus*)

pocketed free-tailed bat western mastiff bat (*Eumops perotis californicus*) western yellow bat Yuma myotis (*Myotis yumanensis*)

Plants	
aphanisma (Aphanisma blitoides)	Orcutt's spineflower
California adolphia	oil neststraw
chaparral ragwort	purple stemodia
cliff spurge (Euphorbia misera)	Robinson's peppergrass (<i>Lepidium virginicum</i> var. <i>robinsonii</i>)
coast woolly-heads	San Diego ambrosia
Coulter's goldfields	San Diego barrel cactus
Coulter's saltbush (Atriplex coulteri)	San Diego marsh-elder (Iva hayesiana)
decumbent goldenbush	San Diego sand aster (Corethrogyne
	filaginifolia var. incana)
estuary seablite	sea dahlia (Leptosyne maritima)
golden-spined cereus (<i>Bergerocactus</i>	Shaw's agave (Agave shawii)
long spined spineflower (Charizanthe	anaka ahalla (Culin dramuntia adlifarnian yar
polygonoides longispina)	californica)
Nuttall's scrub oak	wart-stemmed ceanothus
Orcutt's pincushion (Chaenactis	variegated dudleya

4.4.4 Designated Critical Habitat in the Central Area Component

glabriuscula var. orcuttiana)

The Central Area component includes USFWS-CH for the following listed species:

• Coastal California gnatcatcher on both sides of Fletcher Parkway at Hillside Park in El Cajon

4.4.5 Jurisdictional Waters in the Central Area Component

The study area of the Central Area component includes aquatic and riparian resources potentially regulated by federal, state, and local agencies. These resources include wetlands and waters mapped in the NWI and riparian vegetation. Aquatic resources mapped in the NWI in the Central Area component include estuarine and marine deepwater, estuarine and marine wetland, riverine, freshwater forested/shrub wetland, and freshwater pond. Blue line streams not mapped in the NWI but shown on USGS maps also occur in the Central Area component. Wetland and riparian vegetation types mapped in the Central Area component include freshwater marsh, southern riparian woodland, southern arroyo willow riparian forest, southern cottonwood-willow riparian forest, non-native riparian, and open water.

4.4.6 Wildlife Corridors and Linkages in the Central Area Component

The study area of the Central Area component includes MSCP core areas in Point Loma and Lakeside. Linkages within the Central Area component include the San Diego River and the I-8 at Lakeside linkage.



4.4.7 Preserved Lands in the Central Area Component

The study area of the Central Area component includes lands preserved by the City, CDFW, City of El Cajon, and private landowners. City preserved lands include open space at the Point Loma WWTP, Point Loma Ecological Conservation Area lands on Point Loma, San Diego River Flood Control Channel, San Diego River Park, Public Utilities Department mitigation sites, Navajo Canyon, and Mission Trails Regional Park (below Lake Murray Dam). Preserved lands owned by CDFW include the San Diego River Ecological Reserve; City of El Cajon preserved lands include Hillside Park. Private preserved lands in the Central Area component include the Fletcher Hills Terrace HOA across Fletcher Parkway from Hillside Park, and Avalon Fashion Valley LP lands north of Friars Road near Fashion Valley Mall.

With the exceptions of private lands and City of El Cajon lands, all preserved lands listed above are also in the City's MHPA. The western half of the proposed AWPF-CC-MV site at Camino del Rio North is also inside the MHPA.

The Central Area component includes County MHCP PAMA lands in the San Diego River in Lakeside.

4.5 RESOURCES IN THE SOUTH BAY AREA

4.5.1 Proposed Facilities in the South Bay Component

The South Bay component of the Pure Water Program would include improvements to the South Bay Water Reclamation Plant (South Bay Plant) to increase water reclamation capabilities from its current design capacity of 15 mgd to 44 mgd, installation of a new pump station and pipeline to convey additional wastewater to the plant, construction of a new South Bay AWPF, and construction of a conveyance system (i.e., pump stations and pipeline) to deliver purified water to the Otay Reservoir. The South Bay component would be capable of treating up to 28 mgd annual average daily flow (AADF) of wastewater and producing up to 15 mgd AADF of purified water and 9 mgd AADF of non-potable reuse.

In summary, the South Bay component includes the following proposed facilities:

- 1. An AWPF (AWPF-SB) at the existing South Bay Plant;
- 2. A wastewater forcemain (WF-SB) from National City to the AWPF-SB;
- 3. A reservoir outfall/discharge structure (ROD-SB) at Otay Reservoir;
- 4. A purified water pipeline (PWP-SB) connecting the AWPF-SB to Otay Reservoir; and
- 5. Pump stations.

The South Bay component would be located in a mix of developed and undeveloped areas. The Otay River Valley, Tijuana River Valley, Otay Reservoir, and lands along the shore of San Diego



Bay are undeveloped, while National City, Imperial Beach/Nestor, and San Ysidro/Otay areas are developed. Although mostly located in or adjacent to existing roads, the proposed WF-SB and PWP-SB alignments would run through extensive undeveloped areas in the Tijuana River and Otay Valley.

Land uses surrounding the South Bay component include:

- 1. Residential, commercial, and industrial development;
- 2. Transportation arteries including I-805, I-5, SR 905, and SR 125;
- 3. Salt evaporation ponds;
- 4. Brown Field;
- 5. Naval Outlying Field Imperial Beach;
- 6. Olympic Training Center;
- 7. Correctional facilities:
- 8. Otay Landfill;
- 9. Tijuana River National Estuarine Research Reserve; and
- 10. San Diego Bay NWR.

4.5.2 Habitats and Land Covers in the South Bay Component

Habitat types and land covers within the study area for South Bay component proposed facilities include:

Wetland/Riparian

- Southern coastal salt marsh Maritime succulent scrub
- Freshwater marsh
- Saltbush scrub
- Southern riparian woodland
- Southern arroyo willow riparian forest
- Mule fat scrub
- Non-native riparian
- Tamarisk scrub
- Salt pan/mudflat
- Open water

Sensitive Upland

- Diegan coastal sage scrub • Diegan coastal sage scrub – baccharis dominated
- Non-native grassland
- Wildflower field

Non-Sensitive Upland

- Broadleaf-dominated nonnative grassland
- Eucalyptus woodland
- General agriculture
- Developed lands
- Disturbed lands

4.5.3 Special-status Species in the South Bay Component

The following special-status species are represented by database occurrence records within 0.5 mile of the South Bay component.

Animals

Invertebrates	
Riverside fairy shrimp (Streptocephalus	monarch butterfly
woottoni)	
San Diego fairy shrimp	Quino checkerspot butterfly
western beach tiger beetle	Thorne's hairstreak (Callophrys thornei)
western tidal-flat tiger beetle	
Reptiles	
green turtle (Chelonia mydas)	rosy boa (Lycanura trivirgata)
Orange-throated whiptail	
Birds	
Belding's savannah sparrow	light-footed Ridgway's rail (light-footed
	clapper rail; Rallus obsoletus brevipes)
burrowing owl (Athene cunicularia)	northern harrier (Circus cyaneus)
California black rail (Laterallus jamaicensis	southern California rufous-crowned sparrow
coturniculus)	_
California least tern	western snowy plover
coastal cactus wren	western yellow-billed cuckoo (Coccyzus
	americanus occidentalis)
coastal California gnatcatcher	yellow-breasted chat (Icteria virens)
least Bell's vireo	
Mammals	
northwestern San Diego pocket mouse	San Diego black-tailed jackrabbit
(Chaetodippus fallax fallax)	
pallid bat	western red bat (Lasiurus blossevilli)
pocketed free-tailed bat	Yuma myotis
Plants	
ashy spike moss (Selaginella cinerascens)	Parry's tetracoccus (Tetracoccus dioicus)
beach goldenaster (Heterotheca sessiliflora	prostrate vernal pool navarretia
ssp. <i>sessiliflora</i>)	
Baja California birdbush (Ornithostaphylos	purple stemodia
oppositifolia)	
California adolphia	Robinson's peppergrass
chaparral ragwort	round-leaved filaree (Californica
	macrophylla)
cliff spurge	salt marsh bird's beak (Chloropyron
	maritimum ssp. maritimum)
coast woolly-heads	sea dahlia
Coulter's goldfields	San Diego barrel cactus
decumbent goldenbush	San Diego bur-sage (Ambrosia
	chenopodiifolia)
estuary seablite	San Diego button-celery
golden-spined cereus	San Diego goldenstar



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Plants (cont.)	
Laguna Mountains jewelflower	San Diego marsh-elder
(Streptanthus bernardinus)	
little mousetail (<i>Myosurus minimus</i> ssp. <i>apus</i>)	San Diego sunflower (Bahiopsis laciniata)
Munz's sage (Salvia munzii)	San Diego thorn-mint
Nuttall's lotus	singlewhorl burrobrush
Nuttall's scrub oak	slender cottonheads (<i>Nemacaulis denudata</i> var. <i>gracilis</i>)
Orcutt's bird's-beak (Dicranostegia orcuttiana)	snake cholla
Otay Mesa mint (Pogogyne nudiuscula)	south coast saltscale (Atriplex pacifica)
Otay tarplant (Deinandra conjugens)	spreading navarretia (Navarretia fossalis)
Palmer's goldenbush (Ericameria palmeri)	Tecate cypress (Hesperocyparis forbesii)
Palmer's grapplinghook	variegated dudleya
Palmer's frankenia (Frankenia palmeri)	wart-stemmed ceanothus

4.5.4 Designated Critical Habitat in the South Bay Component

The study area of the South Bay component includes USFWS-CH for the following listed species:

- Quino checkerspot butterfly at Otay Lakes County Park;
- Otay tarplant east of Robinhood Ridge, the Otay Valley, and Otay Ranch Preserve in Chula Vista; and
- Least Bell's vireo in the Tijuana River at Hollister Street, and the Tijuana River at Dairy Mart Road and Camino de la Plaza.

4.5.5 Jurisdictional Waters in the South Bay Component

The South Bay component includes aquatic and riparian resources potentially regulated by federal, state, and local agencies. These resources include wetlands and waters mapped in the NWI and riparian vegetation. Aquatic resources mapped in the NWI in the South Bay component include estuarine and marine wetland, estuarine and marine deepwater, freshwater pond, freshwater forested/shrub wetland, freshwater emergent wetland, riverine, and lake. Blue line streams not mapped in the NWI but shown on USGS maps also occur in the South Bay component include southern coastal salt marsh, freshwater marsh, saltbush scrub, southern riparian woodland, southern arroyo willow riparian forest, mule fat scrub, non-native riparian, tamarisk scrub, salt pan/mudflat, and open water.

4.5.6 Wildlife Corridors and Linkages in the South Bay Component

The study area of the South Bay component includes MSCP core areas in Otay Valley, the Tijuana River Valley, the south end of San Diego Bay, Otay Reservoir, and Otay Mesa. Linkages within the South Bay component include portions of the Sweetwater River and Otay River.

4.5.7 Preserved Lands in the South Bay Component

The study area of the South Bay component includes lands preserved by the City, County, USFWS, U.S. Department of Defense (DOD), International Boundary and Waters Commission, City of Chula Vista, and private landowners. Preserved lands in the South Bay Area component fall into 4 general areas: the southeastern shore of San Diego Bay, Tijuana River Valley Regional Park (TRVRP), Otay Mesa North, and Otay Ranch/Otay Lakes.

Portions of the southeastern shore of San Diego Bay, including the estuaries of the Sweetwater and Otay Rivers, are protected by the USFWS in the San Diego Bay NWR and additional City property outside the NWR. San Diego Bay NWR lands in the City are also included in the MHPA, as is the Salt Work property which is owned by the City but outside the NWR. Additional private lands in the City east of Bay Boulevard are included in the MHPA but not preserved. San Diego Bay NWR lands in Chula Vista and National City are not in the MHPA.

Preserved lands in the TRVRP include lands owned by the DOD, USFWS, County, City, and International Boundary Waters Commission. DOD and some USFWS service lands are not included in the MHPA, but all other preserved lands in the TRVRP are also in the MHPA.

Preserved lands in Otay Mesa North include lands owned by the City, Pardee Homes, California Terraces HOA, Dolphin Cove Maintenance Association, Western Pacific Housing, and the Environmental Trust. Except for the California Terraces HOA and Pardee Homes lands on Dennery Road, all preserved lands in Otay Mesa North are also included in the MHPA. Additional undeveloped land across Dennery Road from Palm Promenade is not preserved but is in the MHPA. Otay Mesa North includes City and private preserved lands in Robinhood Ridge. Environmental Trust preserved lands in Robinhood Ridge inside the City of Chula Vista are not in the MHPA.

The study area of the South Bay component includes extensive areas in the Otay Ranch Preserve, near the east end of Otay Valley. Otay Ranch Preserve lands owned by the County and the City of Chula Vista are included in the South Bay component, and are not in the MHPA. County Preserved lands in this area also include Otay Lakes County Park, which is not in the MHPA. City preserved lands in this area include Otay Lakes Cornerstone Lands, which are in the MHPA. Additional City property on the west shore of Otay Reservoir is also in the MHPA but not preserved. Private preserved lands in this area include PR II Windstar Pointe Master LLC lands on the west side of Wueste Road near the Olympic Training Center.

The study area of the South Bay component does not include any County MSCP Hardline Preserve or PAMA lands. County lands in Otay Lakes County Park are Take Authorized area.



5.0 POTENTIAL BIOLOGICAL CONSTRAINTS

This section provides analysis of potential biological constraints on the Pure Water Program components. The analysis is organized first according to the seven questions listed in Section 1.0, and then by program components. Recommendations for impact avoidance and mitigation/permitting requirements for unavoidable impacts are provided for each question.

5.1 SENSITIVE HABITATS AND NATURAL COMMUNITIES (UPLANDS)

5.1.1 Potential Impacts

This section discusses potential impacts from the Pure Water Program to sensitive upland habitats and communities. Communities are ranked according to the relevant planning document as follows: City MSCP Subarea Plan (Tier), County MSCP Subarea Plan (CoTier), Chula Vista MSCP Subarea Plan (CVTier; Chula Vista 2003). Communities classified in those documents as Tier IV are considered non-sensitive uplands and are not included in this analysis.

5.1.1.1 North City Area

AWPF north of Eastgate Mall and east of I-805 (AWPF-NC)

The AWPF-NC would be located within:

Tier IIIb: Non-native grassland

Some impacts could be permanent.

North City Plant Upgrades

The North City Plant is located within and/or adjacent to:

Tier IIIb: Non-native grassland in small peripheral areas. Most of the site is currently developed.

Some impacts could be permanent.

Wastewater Forcemain and Brine Pipeline from the North City Plant to the Proposed Pump Station (WFBP)

The conceptual alignment of the WFBP would be located within and/or adjacent to:

Tier I: Southern maritime chaparral, maritime succulent scrub, scrub oak chaparral, and coast live oak woodland



Tier II: Diegan coastal sage scrub

Tier IIIb: Non-native grassland

Because the proposed WFBP would be underground, impacts would be temporary.

Purified Water Pipeline from the North City Plant to San Vicente Reservoir (PWP-NC)

The conceptual alignment of the PWP-NC would be located within and/or adjacent to:

Tier II/CoTier II: Diegan coastal sage scrub

Tier IIIa/CoTier III: Southern mixed chaparral and chamise chaparral

Tier IIIb/CoTier III: Non-native grassland

Because the proposed PWP-NC would be underground, impacts would be temporary.

Pump Stations

None.

Reservoir Outfall/Discharge at San Vicente Reservoir (ROD-NC)

The ROD-NC would be located within:

CoTier III: Chamise chaparral

Some impacts would be permanent.

5.1.1.2 Central Area

Water Reclamation/Advanced Water Purification Facility at Harbor Drive (WR/AWPF-CC-HD) None.

Sludge Pipeline from the WR/AWPF-CC-HD to the Point Loma WWTP (SP)

The conceptual alignment of the SP would be located within and/or adjacent to:

Tier I: Southern maritime chaparral

Tier II: Diegan coastal sage scrub

Because the proposed SP would be underground, impacts would be temporary.

Pump Station or AWPF in Mission Valley (AWPF-CC-MV)

The AWPF-CC-MV would be located within:

Tier IIIb: Non-native grassland in the western two-thirds of the site.

Some impacts could be permanent.

Pipeline from the WR/AWPF-CC-HD to the Pump Station/AWPF-CC-MV (P-CC)

None.

Purified Water Pipeline from the Pump Station/AWPF-CC-MV to the PWP-NC (PWP-CC)

The conceptual alignment of the PWP-CC would be located within and/or adjacent to:

Tier I: Maritime succulent scrub

Tier II: Diegan coastal sage scrub

Tier IIIb: Non-native grassland

Because the proposed PWP-CC would be underground, impacts would be temporary.

Pump Station at Lake Murray Boulevard

None.

5.1.1.3 South Bay Area

Advanced Water Purification Facility at the South Bay Water Reclamation Plant (AWPF-SB) None.

Wastewater Forcemain from National City to the AWPF-SB (WF-SB)

The conceptual alignment of the SP would be located within and/or adjacent to:

Tier II/CVTier II: Diegan coastal sage scrub

Because the proposed WF-SB would be underground, impacts would be temporary.

Reservoir Outfall/Discharge Structure at Otay Reservoir (ROD-SB)

The ROD-SB would be located within and/or adjacent to:

CVTier II: Diegan coastal sage scrub in the western half of the site.

Some impacts could be permanent.

Purified Water Pipeline from the AWPF-SB to Otay Reservoir (PWP-SB)

The conceptual alignment of the PWP-SB would be located within and/or adjacent to:

Tier I/CVTier I: Maritime succulent scrub

Tier II/CVTier II: Diegan coastal sage scrub

Tier IIIb/CVTier III: Non-native grassland

Because the proposed PWP-SB would be underground, impacts would be temporary.

Pump Station at Otay Lakes County Park

The conceptual alignment of the pump station would be located within and/or adjacent to:

Tier II/CoTier II: Diegan coastal sage scrub in the eastern third of the site.

Some impacts could be permanent.

Pump Station at Sea Vale Street

None.

5.1.2 Sensitive Upland Community Impact Avoidance Recommendations

5.1.2.1 North City Area

AWPF north of Eastgate Mall and east of I-805

Impacts to Tier IIIb vegetation from the proposed AWPF-NC would be unavoidable.

North City Water Reclamation Plant Upgrades

Avoiding undeveloped peripheral portions of the existing NCWRP site would avoid impacts to Tier IIIb vegetation.

Wastewater Forcemain and Brine Pipeline from the NCWRP to the Proposed Pump Station at Sherman Street (WFBP)

Impacts to Tier I, Tier II, and Tier IIIb communities in the conceptual WFBP alignment would be unavoidable. However, impacts to other sensitive upland communities could be avoided by constructing the WF-NC in existing streets.

Wastewater Forcemain from Genesee Avenue to Mission Valley (WF-NC)

All impacts to sensitive upland communities could be avoided by constructing the conceptual WF-NC in existing streets.

Purified Water Pipeline from the NCWRP to San Vicente Reservoir (PWP-NC)

Impacts to sensitive upland communities would be unavoidable, but could be minimized by constructing the conceptual PWP-NC in existing streets where possible. Most of the unavoidable impacts would likely be to non-native grassland and chamise chaparral.

Proposed Pump Stations at Mission Bay Drive, Sherman Street, and Mission Montana Drive

No avoidance measures are necessary.

Reservoir Outfall/Discharge at San Vicente Reservoir (ROD-NC)

Temporary and permanent impacts to Tier IIIa vegetation from the proposed ROD-NC would be unavoidable.

5.1.2.2 Central Area

Water Reclamation/Advanced Water Purification Facility at Harbor Drive (WR/AWPF-CC-HD)

No avoidance measures would be necessary.

Sludge Pipeline from the WR/AWPF-CC-HD to the Point Loma WWTP (SP)

Impacts to Tier I and Tier II communities would be unavoidable for open trench construction, but could be avoided or minimized by using jack-and-bore or directional drilling construction methods or by using existing subterranean pipe in that location.

Pump Station or AWPF (AWPF-CC-MV) in Mission Valley

Impacts to Tier IIIb vegetation would likely be unavoidable, but could be minimized by locating the proposed facility in the western portion of the site.

Pipeline from the WR/AWPF-CC-HD to the Pump station/AWPF-CC-MV (P-CC)

No avoidance measures would be necessary.

Purified Water Pipeline from the pump station/AWPF-CC-MV to the PWP-NC (PWP-CC)

Impacts to small areas of sensitive upland communities in Navajo Canyon and below Lake Murray Dam would be unavoidable using open trench construction methods. Using jack-andbore or directional drilling construction methods in these locations could avoid impacts. Locating the proposed PWP-CC in existing streets where possible could avoid impacts to sensitive upland communities in the remainder of the conceptual alignment.

Pump Station at Lake Murray Boulevard

No avoidance measures would be necessary.

5.1.2.3 South Bay Area

Advanced Water Purification Facility at the South Bay Water Reclamation Plant (AWPF-SB)

Limiting the proposed AWPF-SB to the existing South Bay Plant site would avoid impacts to adjacent sensitive upland communities.

Wastewater Forcemain from National City to the AWPF-SB (WF-SB)

Impacts to sensitive upland communities could be avoided by locating the proposed WF-SB in existing streets within the conceptual alignment.

Reservoir Outfall/Discharge Structure at Otay Reservoir (ROD-SB)

Because the proposed ROD-SB would be an above-ground facility, impacts to CVTier II vegetation from the proposed ROD-SB would likely be unavoidable.

Purified Water Pipeline from the AWPF-SB to Otay Reservoir (PWP-SB)

Impacts to sensitive upland communities from the proposed PWP-SB would likely be unavoidable given the overall undeveloped nature of lands in the conceptual alignment. Locating the proposed PWP in existing streets and unpaved roads could minimize impacts to sensitive upland communities. Most of the impacts to sensitive upland communities from the proposed PWP-SB would likely be to non-native grassland and maritime succulent scrub.

Pump Station at Otay Lakes County Park

Because the proposed pump station would be an above-ground facility, impacts to Tier II/ Group C vegetation from the proposed pump station would likely be unavoidable, but could be



minimized by locating the pump station in the eastern portion of the proposed site, which is currently developed.

Pump Station at Sea Vale Street

No avoidance measures would be necessary.

5.1.3 Mitigation and Permitting Requirements

5.1.3.1 Mitigation Requirements for Impacts to Sensitive Upland Communities

Unavoidable permanent impacts to sensitive upland communities in the City MSCP Subarea Plan area would require mitigation at the following ratios, assuming mitigation is provided inside the City's MHPA (Table 2): Tier I – 1:1; Tier II – 1:1; Tier IIIa – 1:1; and Tier IIIb – 0.5:1. Mitigation inside the MHPA can be at- or above Tier.

Table 2 CITY UPLAND MITIGATION RATIOS FOR UNAVOIDABLE IMPACTS						
TIER	HABITAT TYPE	MITIGATION RATIOS				
	Southern Foredunes		Location of Preservation			
TIER 1	Coastal Bluff Scrub			Inside	Outside	
(rare uplands)	Maritime Succulent Scrub Maritime Chaparral	Location	Inside*	2:1	3:1	
	Native Grassland Oak Woodlands	Impact	Outside	1:1	2:1	
TIED II		Location of Preservation				
(uncommon uplands)	Coastal Sage Scrub (CSS) CSS/Chaparral			Inside	Outside	
· · · · · · · · · · · · · · · · · · ·	F	Location	Inside*	1:1	2:1	
		of Impact	Outside	1:1	1.5:1	

Table 2 (cont.) CITY UPLAND MITIGATION RATIOS FOR UNAVOIDABLE IMPACTS					
TIER	HABITAT TYPE	MITIGATION RATIOS			
		Location of Preservation			
TIER III A: (common	Mixed Chaparral			Inside	Outside
uplands)	Chamise Chaparrai	Location	Inside*	2:1	3:1
		Impact	Outside	1:1	2:1
TIER III B:	Non-Native Grasslands	Location of Preservation		Outside	
uplands)	INOII-INALIVE OFASSIAILUS	Location of Impact	Inside*	1:1 0.5:1	1.5:1

*Location inside/outside of the MHPA

Mitigation located inside the MHPA for all Tier I impacts must be in-tier, but may be out-of-kind. For impacts to Tier II, IIIA, or IIIB habitats (excluding occupied burrowing owl habitat), the mitigation could (1) include any Tier I, II, IIIA or IIIB habitats (out-of-kind) within the MHPA or (2) occur outside of the MHPA within the affected habitat type (in-kind). Mitigation for impacts to occupied burrowing owl habitat (at the subarea plan specified ratio/Table 3 of the Biology Guidelines) must be through the conservation of occupied burrowing owl habitat or conservation of lands appropriate for restoration, management and enhancement of burrowing owl nesting and foraging requirements. Mitigation may be satisfied by one or a combination of the following methods 1) Off site acquisition, 2) On-site preservation, 3) Habitat Restoration, 4) Monetary Compensation such as the Habitat Acquisition Fund, or other methods determined on a case-by-case basis to reduce impacts to below a level-of-significance. In all cases, mitigation sites must have long-term viability. Viability will be assessed by the connectivity of the site to larger planned open space, surrounding land uses, and sensitivity of the MHPA resources to environmental change.

At a minimum, all temporary impact area must be revegetated with native species. Temporary impact that does not result in ground disturbance or removal of below-ground parts of vegetation, such as crushing vegetation for spoils piles or staging areas, may be restored by revegetation with no additional mitigation. Revegetation would be completed by a combination of hydroseeding and/or container planting. Unless otherwise specified in permits, revegetation of temporary impact areas would require preparation of a revegetation plan, installation, 120-day plant establishment period, and 25-month maintenance and monitoring. Temporary impact that



does result in ground disturbance or removal of below-ground parts of vegetation, such as trenching followed by backfilling and restoration of pre-disturbance surface contours, would require restoration by revegetation as well as additional mitigation at the ratios shown in Table 2.

Unavoidable permanent impacts to sensitive upland communities in the Chula Vista MSCP Subarea Plan area would require mitigation at the following ratios, assuming mitigation is provided inside the Preserve (Table 3): CVTier I – 1:1 for impacts outside the Preserve and 2:1 for impacts inside the Preserve; CVTier II – 1:1 for impacts outside the Preserve and 1.5:1 for impacts inside the Preserve; CVTier III – 0.5:1 for impacts outside the Preserve and 1:1 for impacts inside the Preserve. A large portion of the proposed PWP-SB in Otay Valley is inside the Otay Ranch Preserve.

Table 3 CHULA VISTA UPLAND HABITAT MITIGATION RATIOS					
TIFD		LOCATION OF	LOCATION OF PRESERVATION		
TIEK	HABIIAI IYPE	IMPACT	Inside Preserve	Outside Preserve	
Tier I: (rare uplands	Southern foredunes, Coastal bluff scrub, Maritime succulent	Inside Preserve	2:1	3:1	
	scrub, Native grasslands, Oak woodlands	Outside Preserve	1:1	2:1	
Tier II:	Coastal sage scrub,	Inside Preserve	1.5:1	2:1	
uplands)	CSS/Chapartai	Outside Preserve	1:1	1.5:1	
Tier III: (common	Mixed chaparral, Chamise chaparral, Non-	Inside Preserve	1:1	1.5:1	
uplands)	native grassland, Scrub oak/chaparral	Outside Preserve	0.5:1	1:1	
Tier IV: (other uplands)	Disturbed lands, Agricultural lands, Eucalyptus	NA	No mitigation required	No mitigation required	

Unavoidable permanent impacts to sensitive upland communities in the County MSCP Subarea Plan area would require mitigation at the following ratios, assuming the land conserved as mitigation meets the definition of biological resource core area (Table 4): CoTier II – 1:1 if impacted land does not meet the definition of biological resource core area and 1.5:1 if impacted land does not meet the definition of biological resource core area and 1.5:1 if impacted land does not meet the definition of biological resource core area and 1:1 if impacted land does not meet the definition of biological resource core area and 1:1 if impacted land meets the definition of biological resource core area and 1:1 if impacted land meets the definition of biological resource core area and 1:1 if impacted land meets the definition of biological resource core area and 1:1 if impacted land meets the definition of biological resource core area and 1:1 if impacted land meets the definition of biological resource core area and 1:1 if impacted land meets the definition of biological resource core area and 1:1 if impacted land meets the definition of biological resource core area and 1:1 if impacted land meets the definition of biological resource core area and 1:1 if impacted land meets the definition of biological resource core area. Non-native grassland is always mitigated at 0.5:1.



Mitigation can be provided through preservation of biological resource core areas by fee title transfer, conservation easement, or other appropriate title encumbrances.

Table 4 COUNTY UPLAND MITIGATION RATIOS					
TIER IMPACTED LAND					
TIER I					
Conserved Land	meets the criteria for biological resource core area	meets the criteria for biological resource core area			
meets the criteria for biological resource core area	2:1	1:1			
does not meet the criteria for biological resource core area	3:1	2:1			
TIERII					
Conserved Land	meets the criteria for biological resource core area	meets the criteria for biological resource core area			
meets the criteria for biological resource core area	1.5:1	1:1			
does not meet the criteria for biological resource core area	2:1	1.5:1			
TIER III					
Conserved Land	meets the criteria for biological resource core area	meets the criteria for biological resource core area			
meets the criteria for biological resource core area	1:1	0.5:1			
does not meet the criteria for biological resource core area	1.5:1	1:1			

Unavoidable permanent impacts to sensitive upland communities on MCAS Miramar would require mitigation at the ratios provided in the MCAS Miramar INRMP. Mitigation for impacts by non-military entities must be provided on land outside of MCAS Miramar.

5.1.3.2 Permit Requirements

Construction of proposed Pure Water Program component facilities on City lands would require a Site Development Permit/Coastal Development Permit.

Construction of South Bay Area component facilities in Chula Vista would be governed by the Chula Vista Habitat Loss and Incidental Take (HLIT) Ordinance process outside of the development area of Covered Projects, and by project-specific conditions inside Covered Projects. Future facilities inside 100-percent Conserved Areas such as the Otay Ranch Preserve are subject to siting criteria analysis.



The proposed PWP-NC alignment includes lands in the Metro-Lakeside-Jamul segment of the County MSCP Subarea Plan designated as Hardline Preserve. Lands designated as Hardline Preserve in the County MSCP Subarea Plan have already been preserved and are restricted from development. Permits for temporary impacts to Hardline Preserve would require an equivalency analysis to demonstrate that revegetation/restoration of temporary impact areas would provide equivalent or superior biological resources value in the Preserve, and might require mitigation at more than 1:1. If the Hardline Preserve lands are under a conservation easement or other restrictive covenant, allowed activities in the Hardline Preserve area would be dictated by that easement.

Construction of facilities on federal lands in MCAS Miramar and the San Diego Bay NWR would require analysis under NEPA. Actions in existing rights-of-way or easements on MCAS Miramar lands may not require authorization from MCAS Miramar and therefore would require that the City resolve ESA compliance directly with the USFWS under Section 10 of the ESA. The MCAS Miramar INRMP requires mitigation for impacts to resources on MCAS Miramar lands. Mitigation for impacts by non-military entities must be provided off of MCAS Miramar. Tables 6.2.2.2a and 6.2.2.2b of the INRMP provide mitigation ratios for temporary and permanent impacts, respectively. Compensatory mitigation is required only when threatened or endangered species are present in the impact area, and ratios range from 1:1 to 2:1 for temporary impacts and between 1:1 and 3:1 for permanent impacts.

5.2 CITY, STATE, AND FEDERALLY REGULATED WETLANDS

The proposed Pure Water Program was analyzed for potential impacts to wetlands mapped in the USFWS National Wetland Inventory, wetland and riparian vegetation shown in SANDAG-VD mapping, MCAS Miramar's INRMP, and blue line streams shown on USGS topographic maps.

5.2.1 Potential Wetland Impacts

5.2.1.1 North City Area

Proposed facilities and pipelines in the North City component would impact City, state, and federally regulated wetlands included in the USFWS-NWI and SD-VPI databases, as well as the MCAS Miramar's INRMP.

AWPF north of Eastgate Mall and east of I-805 (AWPF-NC)

The proposed AWPF-NC includes vernal pools mapped in the USFWS-NWI (NWI), and vernal pools mapped in the SD-VPI. The NWI vernal pools are scattered throughout the site and could be impacted by the project. Several SD-VPI vernal pools occur along a dirt road near the western edge of the site.

North City Water Reclamation Plant Upgrades

The North City Plant site includes freshwater emergent wetland mapped in the NWI. This consists of the western end of a stream channel that is shown on USGS topographic maps as a



blue line stream tributary to Rose Canyon. This feature lies at the extreme eastern edge of the North City Plant site, outside of the existing fence, and continues upstream to the east of the NCWRP site. Aerial imagery suggests that this stream has been filled or culverted for construction of the North City Plant, I-805, and development west of I-805, and no longer appears as a surface feature west of the eastern edge of the North City Plant site. SANDAG vegetation mapping shows non-native grassland at this location.

Wastewater Forcemain and Brine Pipeline from the North City Plant to the Proposed Pump Station at Sherman Street (WFBP)

The conceptual alignment of the WFBP could impact regulated wetlands and waters at four points north of Governor Drive.

The conceptual alignment of the WFBP crosses several USGS blue line streams, including near Miramar Road and Rose Creek.

Between Governor Drive and the proposed pump station at Sherman Street, the conceptual alignment of the WFBP is located in or adjacent to existing streets except at a few locations, including where Morena Boulevard crosses Tecolote Creek.

If the proposed WFBP were constructed in the existing streets and used existing bridges and other stream crossings associated with those streets, no additional impacts to regulated wetlands and waters would be minimized. The conceptual alignment of the WFBP crosses USGS blue line streams in existing streets at San Clemente Canyon and two points in upper Tecolote Canyon.

Additional jurisdictional wetlands mapped in the NWI inside the 1,000-foot-wide study area of the conceptual alignment of the WFBP include: riparian scrub in the San Diego River, riverine wetland, estuarine wetland, riparian scrub, and riparian scrub/forest.

Purified Water Pipeline from the NCWRP to San Vicente Reservoir (PWP-NC)

The conceptual alignment of the PWP-NC could impact regulated wetlands and waters at a number of locations between Eastgate Mall and the proposed ROD-NC, including blue line streams, vernal pools, riverine wetland in Rose Creek, freshwater forested/shrub wetland, the San Diego River, and southern coast live oak riparian forest.

Pump Stations

The proposed pump stations would not impact regulated wetlands or waters. All lands within the 300-foot study area for the Mission Bay Drive pump station are currently developed, as are all lands within the 1,000-foot study area for the proposed pipeline spur connecting the pump station to the WFBP. No wetland resources occur within the 300-foot study area for the Mission Montana Drive pump station. The 300-foot study area for the Sherman Street pump station includes southern cottonwood-willow riparian forest across Friars Road from the pump station. This area would not be impacted by the proposed pump station. The 300-foot study area for the



Moreno Avenue pump station includes a portion of San Vicente Creek, which is mapped as riverine wetland in the NWI.

Reservoir Outfall/Discharge at San Vicente Reservoir (ROD-NC)

The proposed ROD-NC would impact an unnamed USGS blue line stream that runs through the center of the proposed facility. This stream also supports southern coast live oak riparian forest vegetation, which is under USACE and/or CDFW jurisdiction.

Additional wetlands mapped in the NWI inside the 300-foot study area for the ROD-NC include a small area mapped as lake. Current aerial imagery shows this area above the existing level of the lake shore.

5.2.1.2 Central Area

Proposed facilities and pipelines in the Central Area component could impact City, state, and federally regulated wetlands included in the USFWS-NWI and SD-VPI databases.

Water Reclamation/Advanced Water Purification Facility at Harbor Drive (WR/AWPF-CC-HD)

The proposed WR/AWPF-CC-HD site includes no mapped wetland resources.

Sludge Pipeline from the WR/AWPF-CC-HD to the Point Loma WWTP (SP)

The conceptual alignment of the SP crosses several unnamed blue line streams. The conceptual alignment also crosses an engineered pond that appears to be a water treatment facility on Transdec Road in Naval Base Point Loma.

Pump Station or AWPF (AWPF-CC-MV) in Mission Valley

The site of the proposed pump station/AWPF-CC-MV includes no NWI wetlands. The site is adjacent to southern riparian woodland in the San Diego River, but would not impact this area.

Pipeline from the WR/AWPF-CC-HD to the Pump Station/AWPF-CC-MV (P-CC)

The conceptual alignment of the P-CC crosses southern arroyo willow riparian forest and southern riparian woodland in the San Diego River. Other wetland facilities in the 1,000-foot-wide study area include parts of San Diego Bay, the San Diego River, and a blue line stream.

Purified Water Pipeline from the Pump Station/AWPF-CC-MV to the PWP-NC (PWP-CC)

The conceptual alignment of the PWP-CC could impact regulated wetlands and waters at several locations, including riverine wetland in Navajo Canyon, a blue line stream supporting non-native riparian vegetation below the Lake Murray Dam, freshwater marsh, riparian forest, and southern arroyo willow riparian forest in the San Diego River, and Alvarado Creek.



Pump Station at Lake Murray Boulevard

The proposed pump station at Lake Murray Boulevard would not impact regulated wetlands or waters. All lands within 300 feet of the proposed pump station site are developed.

5.2.1.3 South Bay Area

Proposed facilities and pipelines in the South Bay component could impact City, state, and federally regulated wetlands included in the USFWS-NWI and SD-VPI databases.

Advanced Water Purification Facility at the South Bay Water Reclamation Plant (AWPF-SB)

The proposed AWPF-SB would not impact regulated wetlands or waters. The proposed site contains developed and disturbed lands.

Wastewater Forcemain from National City to the AWPF-SB (WF-SB)

The conceptual alignment of the WF-SB crosses riverine wetland, salt pan, mudflat, blue line streams, the Tijuana River, estuarine and marine, saltbush scrub and southern coastal salt marsh in Paradise Creek, freshwater marsh and mule fat scrub in the Otay River, and the Sweetwater River.

Reservoir Outfall/Discharge Structure at Otay Reservoir (ROD-SB)

The site of the proposed ROD-SB includes freshwater marsh in the eastern half of the site.

Purified Water Pipeline from the AWPF-SB to Otay Reservoir (PWP-SB)

The conceptual alignment of the PWP-SB crosses the Tijuana River, the Otay River, and numerous blue line streams and riparian areas. Most of the NWI wetland areas in the eastern Otay Valley are mapped as tamarisk scrub or non-native riparian in SANDAG vegetation mapping.

Pump Stations

The site of the proposed pump station at Otay Lakes County Park includes NWI stream at the southwestern edge, south of an existing access road in the water treatment plant. This stream is mapped as supporting eucalyptus woodland in the proposed pump station site and southern arroyo willow riparian forest outside of the site.

The site of the proposed pump station at Sea Vale Street includes saltbush scrub and southern coastal salt marsh in Paradise Creek in the northern portion of the site.
5.2.2 Wetland Impact Avoidance Recommendations

Recommendations for avoidance of wetlands are provided below; however, it should be noted that recommendations to ensure that wetland functionality will be sustained will be provided as part of the project-level analyses.

5.2.2.1 North City Area

AWPF north of Eastgate Mall and east of I-805

Impacts to vernal pools in this location are most likely unavoidable. The NWI vernal pools are scattered throughout the southern two-thirds of the site. The SD-VPI vernal pools are located in a dirt road in the southwest quarter of the site and could be avoided; however, the extent of the watersheds of these pools is unknown and required buffers would likely severely restrict the development area.

North City Water Reclamation Plant Upgrades

The only extant wetland resource on this site is at the extreme eastern edge outside of existing fences. Impact to this resource could be avoided by restricting development to within the existing fence in the immediate area of the resource.

Wastewater Forcemain and Brine Pipeline from the NCWRP to the Proposed Pump Station at Sherman Street

Use of jack-and-bore or directional drilling underneath stream channels and/or suspending the WFBP from existing bridges would minimize impacts to wetland resources. In places where the conceptual alignment runs parallel to streams, the WFBP should be located above the top of bank and outside any riparian vegetation associated with these channels.

Purified Water Pipeline from the North City Plant to San Vicente Reservoir (PWP-NC)

The conceptual alignment of the PWP-NC could impact streams, vernal pools, and riparian vegetation on the alignment in the western portion of MCAS Miramar, Rose Creek, San Clemente Creek, the San Diego River, and San Vicente Creek. Use of jack-and-bore or directional drilling construction methods at stream crossings would minimize impacts to wetland resources. Routing the pipeline around vernal pool complexes or avoiding individual pools and their associated watersheds within more diffuse vernal pool complexes would result in minimizing impacts to vernal pools. Use of existing subterranean pipe in western MCAS Miramar could avoid potential impacts to all mapped vernal pools in the PWP-NC alignment.

Pump Stations

No avoidance measures are necessary to avoid wetland resources impacts at these locations.

Reservoir Outfall/Discharge at San Vicente Reservoir (ROD-NC)

Wetland impacts at the proposed ROD-NC site are most likely unavoidable. The unnamed blue line stream runs through the center of the site from south to north, and southern coast live oak riparian forest occupies approximately up to one-half of the site. Avoidance of impacts to jurisdictional wetlands for the ROD-NC would require relocating the feature.

5.2.2.2 Central Area

Water Reclamation/Advanced Water Purification Facility at Harbor Drive (WR/AWPF-CC-HD)

No avoidance measures are necessary.

Sludge Pipeline from the WR/AWPF-CC-HD to the Point Loma WWTP (SP)

Depending on the nature of the blue line streams crossing Gatchall Road in Naval Base Point Loma, jack-and-bore or directional drilling construction methods would minimize wetland impacts. If Gatchall Road provides existing crossings or if the streams can be bridged, impact avoidance measures may be unnecessary.

Pump Station or AWPF (AWPF-CC-MV) in Mission Valley

No avoidance measures are necessary.

Pipeline from the WR/AWPF-CC-HD to the Pump Station/AWPF-CC-MV (P-CC)

Use of jack-and-bore or directional drilling construction methods would minimize impacts to wetland resources, including at the San Diego River.

Purified Water Pipeline from the Pump Station/AWPF-CC-MV to the PWP-NC (PWP-CC)

Use of existing roads and bridges where Waring Road and Alvarado Canyon Road cross Navajo Canyon could avoid impacts to regulated waters. Otherwise, jack-and-bore or directional drilling construction methods could avoid impacts. Construction of a bridge over the small canyon, or use of jack-and-bore or directional drilling construction methods could avoid impacts to blue line stream and non-native riparian vegetation at Lake Murray Dam. Use of the existing SR 67 bridge over the San Diego River, or use of jack-and-bore or directional drilling construction methods could avoid impacts to wetland and riparian habitats in the San Diego River at SR 67.

Pump Station

No avoidance measures are necessary.

5.2.2.3 South Bay Area

Advanced Water Purification Facility at the South Bay Water Reclamation Plant (AWPF-SB)

No avoidance measures are necessary.

Wastewater Forcemain from National City to the AWPF-SB (WF-SB)

Locating the proposed WF-SB in existing streets and bridges could avoid impacts to regulated wetlands and waters at most locations along the conceptual alignment. At points where the alignment crosses wetlands outside of existing streets, such as Paradise Creek, the Otay River, and the Tijuana River, use of jack-and-bore or directional drilling construction methods could avoid impacts to regulated wetlands and waters.

Reservoir Outfall/Discharge Structure at Otay Reservoir (ROD-SB)

Locating the proposed ROD-SB in the western half of the site, outside of freshwater marsh areas could minimize impacts to regulated wetlands in the site. Total avoidance of regulated wetlands is likely not feasible given the need to construct an outfall to the lakeshore, which is lined with freshwater marsh vegetation.

Purified Water Pipeline from the AWPF-SB to Otay Reservoir (PWP-SB)

Locating the proposed PWP-SB in existing streets and unpaved roads, and in disturbed uplands in Otay Valley, wherever possible, could avoid impacts to regulated wetlands and waters along most of the alignment. Use of jack-and-bore or directional drilling construction methods in the Tijuana River, and in Otay Valley where blue line streams are unavoidable by other means, could avoid impacts to regulated waters at those locations.

Pump Stations

Locating the proposed pump stations in the disturbed and developed portions of the sites lot could avoid impacts to regulated wetlands and riparian vegetation.

5.2.3 Mitigation and Permitting Requirements

5.2.3.1 Mitigation Requirements for Wetland Impacts

Temporary impacts to wetlands must be mitigated at 1:1 through restoration of the temporary impact area. Restoration may include restoration of pre-disturbance contours in channels and revegetation of temporary disturbance areas with native wetland/riparian species.

For permanent impacts, wetland mitigation required by the USACE, CDFW, County, and City includes a "no net loss" requirement under which compensatory mitigation for loss of wetland habitat must provide for a minimum of 1:1 creation of new equivalent habitat. Additional compensatory mitigation requirements can be satisfied through enhancement, restoration, or



rehabilitation. Unless allowed otherwise by the permitting agencies, mitigation for wetland impacts must be provided in the same watershed as the location of impacts. Compensatory mitigation for wetland impacts would require preparation of a wetland restoration plan, installation, 120-day plant establishment period, and 5-year maintenance, monitoring, and reporting.

It is noted that impacts to wetlands would require a deviation from the City's Environmentally Sensitive Lands (ESL) Regulations. Requests to deviate from the wetland regulations may be considered only if the proposed project falls within one of the three options as defined by Section 143.0510(d) of the City's Biology Guidelines. The Pure Water Program falls under the "essential public projects" option under Section 143.0510(d)(1)(B)(ii) – Linear Infrastructure. To obtain a deviation from the wetland regulations, supplemental findings must be made: (1) there are no feasible measures that can further minimize the potential adverse effects on environmentally sensitive lands; and (2) the proposed deviation if the minimum necessary to afford relief from special circumstance or conditions applicable to the land and not of the applicant's making. Additional findings are necessary within the Coastal Zone, such as the project is the least environmentally damaging alternative and is consistent with the provisions of the certified Local Coastal Program with the exception of the provision for which the deviation is requested. All mitigation for unavoidable wetland impacts within the Coastal Overlay Zone must occur within the Coastal Overlay Zone.

5.2.3.2 Wetland Permitting Requirements

Unavoidable impacts to jurisdictional wetlands and waters would require the following permits:

- 1. CWA Section 404 Permit from USACE for unavoidable impacts to WUS;
- 2. CWA Section 401 Water Quality Certification or Report of Waste Discharge from RWQCB for unavoidable impacts to waters of the State;
- 3. CFG Code Section 1602 Streambed Alteration Agreement from CDFW for unavoidable impacts to jurisdictional wetlands (streambed and riparian habitat);
- 4. Coastal Development Permit from CCC for unavoidable impacts to coastal waters; and
- 5. Wetland Deviation Findings from the City of San Diego for impacts to wetlands.

5.3 UNIQUE, RARE, ENDANGERED, SENSITIVE, OR FULLY PROTECTED PLANT AND ANIMAL SPECIES

The proposed Pure Water Program was analyzed for potential impacts to sensitive species based on occurrence records in the databases listed in Table 1. Potential for impacts was considered moderate or high for species represented by database occurrence records that satisfied the following conditions: (1) the record is presumed extant; (2) the record reflects current conditions such as land use changes; (3) the location of the record is sufficiently precise as to allow the



conclusion that the species might reasonably be judged to have potential to occur in the 1,000-foot-wide study area.

5.3.1 Potential Sensitive Species Impacts

5.3.1.1 North City Area

AWPF north of Eastgate Mall and east of I-805 (AWPF-NC)

Sensitive species with moderate or high potential to occur in the proposed AWPF-NC site:

• San Diego fairy shrimp

North City Water Reclamation Plant Upgrades

Sensitive species with moderate or high potential to occur in the proposed North City Plant site:

• None

Wastewater Forcemain and Brine Pipeline from the NCWRP to the Proposed Pump Station at Sherman Street (WFBP)

Sensitive species with moderate or high potential to occur in the proposed WFBP:

- coastal California gnatcatcher
- Coulter's goldfields
- mule deer

- Nuttall's scrub oak
- San Diego fairy shrimp
- wart-stemmed ceanothus

Purified Water Pipeline from the North City Plant to San Vicente Reservoir (PWP-NC)

Sensitive species with moderate or high potential to occur in the proposed PWP-NC:

- American badger
- coast horned lizard
- coastal cactus wren
- coastal California gnatcatcher
- Coronado Island skink
- Coulter's goldfields
- Lakeside ceanothus
- least Bell's vireo
- mule deer
- Nuttall's scrub oak
- orange-throated whiptail
- Orcutt's brodiaea
- pallid bat

HELIX

- Palmer's grapplinghook
- Quino checkerspot butterfly
- San Diego ambrosia
- San Diego black-tailed jackrabbit
- San Diego button-celery
- San Diego desert woodrat
- San Diego fairy shrimp
- San Diego goldenstar
- San Diego mesa mint
- singlewhorl burrobrush
- southern California rufous-crowned sparrow
- summer holly



- two-striped garter snake
- variegated Dudleya

- wart-stemmed ceanothus
- willowy monardella

Pump Stations

Sensitive species with moderate or high potential to occur in the proposed pump station site at Mission Bay Drive:

• None

Pump Stations

Sensitive species with moderate or high potential to occur in the proposed pump station sites:

• None

Reservoir Outfall/Discharge at San Vicente Reservoir (ROD-NC)

Sensitive species with moderate or high potential to occur in the proposed ROD-NC site:

• None

5.3.1.2 Central Area

Water Reclamation/Advanced Water Purification Facility at Harbor Drive (WR/AWPF-CC-HD)

Sensitive species with moderate or high potential to occur in the proposed WR/AWPF-CC-HD site:

• None

Sludge Pipeline from the WR/AWPF-CC-HD to the Point Loma WWTP (SP)

Sensitive species with moderate or high potential to occur in the proposed SP:

- aphanisma
- cliff spurge
- coast horned lizard
- long-spined spineflower
- Nuttall's scrub oak
- Robinson's peppergrass

- San Diego barrel cactus
- San Diego sand aster
- sea dahlia
- snake cholla
- wart-stemmed ceanothus
- western mastiff bat



Pump Station or AWPF (AWPF-CC-MV) in Mission Valley

Sensitive species with moderate or high potential to occur in the proposed pump station/AWPF-CC-MV site:

- least Bell's vireo
- western mastiff bat

Pipeline from the WR/AWPF-CC-HD to the Pump Station/AWPF-CC-MV (P-CC)

Sensitive species with moderate or high potential to occur in the proposed P-CC:

- coastal California gnatcatcher
- decumbent goldenbush
- least Bell's vireo

- Mexican long-tongued bat
- pocketed free-tailed bat

Purified Water Pipeline from the Pump Station/AWPF-CC-MV to the PWP-NC (PWP-CC)

Sensitive species with moderate or high potential to occur in the proposed PWP-CC:

- American badger
- big free-tailed bat
- coast horned lizard
- coastal California gnatcatcher

Pump Station at Lake Murray Boulevard

- least Bell's vireo
- orange-throated whiptail

- pallid bat
- pocketed free-tailed bat
- San Diego marsh-elder
- western mastiff bat
- western yellow bat

- None

5.3.1.3 South Bay Area

Lake Murray Boulevard:

Advanced Water Purification Facility at the South Bay Water Reclamation Plant (AWPF-SB)

Sensitive species with moderate or high potential to occur in the proposed pump station site at

Sensitive species with moderate or high potential to occur in the proposed AWPF-SB site:

• None

Wastewater Forcemain from National City to the AWPF-SB (WF-SB)

Sensitive species with moderate or high potential to occur in the proposed WF-SB:

- Belding's savannah sparrow
- burrowing owl
- coast woolly-heads
- Coulter's goldfields
- decumbent goldenbush
- estuary seablite
- least Bell's vireo
- light-footed Ridgway's rail

- Nuttall's lotus
- orange-throated whiptail
- pallid bat
- Palmer's frankenia
- pocketed free-tailed bat
- San Diego marsh-elder
- singlewhorl burrobrush

Reservoir Outfall/Discharge Structure at Otay Reservoir (ROD-SB)

Sensitive species with moderate or high potential to occur in the proposed d ROD-SB site:

• None

Purified Water Pipeline from the AWPF-SB to Otay Reservoir (PWP-SB)

Sensitive species with moderate or high potential to occur in the proposed PWP-SB:

- burrowing owl
- California adolphia
- cliff spurge
- coast woolly-heads
- coastal cactus wren
- coastal California gnatcatcher
- least Bell's vireo
- Nuttall's scrub oak
- orange-throated whiptail
- Otay tarplant
- Parry's Tetracoccus
- purple stemodia

- Quino checkerspot butterfly
- rosy boa
- San Diego barrel cactus
- San Diego black-tailed jackrabbit
- San Diego bur-sage
- San Diego fairy shrimp
- San Diego marsh-elder
- singlewhorl burrobrush
- snake cholla
- south coast saltscale
- variegated dudleya
- yellow-breasted chat

Pump Stations

HELIX

Sensitive species with moderate or high potential to occur in the proposed pump station sites:

- estuary seablite
- Palmer's frankenia
- western yellow-billed cuckoo
- Yuma myotis

5.3.2 Sensitive Species Impact Avoidance Recommendations

The great majority of the proposed Pure Water Program is located in existing streets and developed areas in an urbanized setting. Most of the database occurrence records for sensitive species that overlap the proposed Pure Water Program alignments do not reflect species locations actually within the locations of the proposed facilities, as those facilities are in currently developed lands. Siting proposed pipelines in existing streets would avoid direct impacts to sensitive species for most of the lengths of the proposed pipeline alignments. Minor deviations from existing streets would not result in impacts to sensitive species, as long as the proposed pipelines remained in developed areas.

The potential for direct impacts to sensitive species is highest where the proposed facilities and/or alignments are located in undeveloped land; however, many of those locations are also in urbanized areas where the potential for sensitive species in the impact footprint is low. High potential for direct impacts is restricted to river crossings, vernal pool complexes, and places such as Otay Valley where proposed facilities are located outside of urbanized areas. In the case of river crossings and vernal pool complexes, use of jack-and-bore or directional drilling construction methods, or existing subterranean pipelines would avoid potential impacts to sensitive species that would be difficult or impossible to avoid using open trench construction. In places outside of existing development, locating proposed facilities in disturbed areas such as dirt roads or patches of nonnative vegetation would minimize the potential for impacts to sensitive species.

Construction noise would potentially result in impacts to sensitive species occupying adjacent habitat. In urbanized areas and along existing streets, the potential for such impacts is low, given the existing high levels of ambient noise from streets and nearby freeways. Noise impacts would be avoided by scheduling work outside of the breeding season for sensitive species. Given the size of the Pure Water Project and the length of time required for construction, avoidance of breeding season(s) may not be practical. If work were to be scheduled during breeding season(s), noise attenuation measures such as noise walls would mitigate potential noise impacts. The City Land Development Code, Biology Guidelines, and MSCP Subarea Plan include restrictions on disturbance to occupied habitat during the breeding season for the following species:

- Western snowy plover: March 1 September 15
- California least tern: May 1 August 30
- Coastal cactus wren: February 15 August 15
- Least Bell's vireo: March 15 September 15
- Coastal California gnatcatcher: March 1 August 15
- Burrowing owl: February 1 August 31
- Southwestern willow flycatcher: May 1 August 30

Other breeding season restrictions that would potentially affect construction of Pure Water Program facilities, but are not enumerated in the MSCP Subarea Plan, include:

- Light-footed Ridgway's rail: March 1 August 31
- Western yellow-billed cuckoo: mid-June Late August
- General raptor breeding season: January August
- General avian breeding season: February 1 September 15

Light-footed Ridgway's rail and western yellow-billed cuckoo are listed species, and raptors and native birds are given general protection by state and federal law. Scheduling construction activities outside of the breeding seasons given above would avoid direct and noise impacts to sensitive and other native bird species. If construction were scheduled during breeding season(s), pre-construction surveys would be required in suitable nesting habitat up to 300 feet away from the project site, depending on the species potentially affected by the project. Direct impacts to occupied habitat for listed species would require compensatory mitigation to meet federal and/or state endangered species permitting requirements.

Most potential impacts to sensitive non-avian animal species would be avoided by locating proposed facilities in existing developed and disturbed areas. Where proposed facilities are not located in existing developed areas, pre-construction clearance surveys are generally sufficient to avoid impacts to sensitive reptile and mammal species.

Database occurrence records for Quino checkerspot butterfly overlap most of the Pure Water Program area; however, the potential for impacts to Quino checkerspot butterfly is low. Most of the occurrence records covering the North City Area and Central Area components are decades old, not spatially explicit (very large areas resulting from imprecise observation or accession data), and do not reflect changes to habitat caused by development. Potential for impacts to Quino checkerspot butterfly is highest in the eastern part of the South Bay Area component, specifically in the Otay Valley, and at San Vicente Reservoir. Occurrence records for Quino checkerspot butterfly in those areas are more recent and spatially explicit than in the rest of the Pure Water Program area. Pre-construction habitat evaluations and protocol surveys for Quino checkerspot butterfly prior to siting the proposed PWP-CC would minimize the potential for impacts to the species or its critical habitat. Other listed species with records in the Pure Water Program area do not have similar large, poorly-defined database occurrence records.

The great majority of database occurrence records for sensitive plant species that overlap the proposed Pure Water Program are not within the current proposed facilities locations. Database occurrence records for the following listed plant species occur in the study area:

- San Diego ambrosia
- Orcutt's spineflower
- Otay tarplant

- San Diego button-celery
- San Diego mesa mint
- willowy monardella

The proposed Pure Water Program facilities would potentially result in direct impacts to these listed plant species.

Impacts to plant species are generally not considered significant unless they result in direct physical disturbance; therefore, occurrence records that overlap the proposed facilities from outside the study area do not indicate a potential for impacts to those sensitive plant species. Most potential impacts to sensitive plant species would be avoided by locating proposed facilities in existing developed and disturbed areas, and using jack-and-bore or directional drilling construction methods or existing subterranean pipelines where facilities cannot be located in existing development. Given the existing disturbed and developed conditions in most of the Pure Water Program proposed facilities. Notable exceptions are in vernal pool complexes in Kearny Mesa, and in Naval Base Point Loma between Gatchall Road and San Gorgonio Street. Existing subterranean pipelines are available in Naval Base Point Loma and parts of Kearny Mesa.

5.3.2.1 North City Area

AWPF north of Eastgate Mall and east of I-805

Potential impacts to San Diego fairy shrimp and sensitive plants from construction of the proposed AWPF-NC are likely unavoidable.

North City Water Reclamation Plant Upgrades

Direct impacts to sensitive plant species could be avoided by confining project activities to currently developed areas. The project would have low potential for significant noise impacts to coastal California gnatcatcher, given the high levels of ambient noise from I-805 and Eastgate Mall. Noise impacts to coastal California gnatcatcher inside the MHPA could be further avoided by scheduling work outside of the breeding season or by using noise attenuation measures during the breeding season. Breeding season restrictions on noise do not apply to coastal California gnatcatcher outside the MHPA.

Wastewater Forcemain and Brine Pipeline from the NCWRP to the Proposed Pump Station at Sherman Street (WFBP)

Potential direct impacts to sensitive species from construction of the proposed WFBP could be avoided by locating the pipeline in existing streets where possible. Impacts could be unavoidable between Eastgate Mall and Nobel Drive if open trench construction methods were used. Use of directional drilling in this area could minimize impacts to sensitive species.

Locating the WFBP in existing streets could avoid direct impacts to sensitive species in those areas. Noise impacts could be avoided by scheduling work outside the breeding season, or by using noise attenuation measures during the breeding season.

Pump Stations

Potential direct impacts to sensitive species could be avoided by locating the proposed pump stations in currently developed areas at the proposed sites. Proposed pump stations at Mission



Bay Drive, Sherman Street, and Mission Montana Drive have low potential for significant noise impacts due to high levels of ambient noise and existing development in the immediate surroundings. Significant noise impacts at Moreno Avenue could be avoided by scheduling work outside the breeding season or using noise attenuation measures during the breeding season.

Reservoir Outfall/Discharge Structure at San Vicente Reservoir (ROD-NC)

Significant direct impacts to sensitive plant species in the proposed ROD-NC site could be avoided by conducting rare plant surveys and providing avoidance, translocation, or mitigation for impacts to any individuals of sensitive species found in the site. The proposed ROD-NC could have low potential for noise impacts to sensitive animals, as there are no database occurrence records for sensitive animal species within 0.5 mile of the proposed site.

The potential for impacts to sensitive species from proposed blending of purified water from the PWP-NC with raw water in San Vicente Reservoir is low. The Biological Technical Report prepared for the Carryover Storage and San Vicente Dam Raise Project (Technology Associates International Corporation [TAIC] 2008) reported seven non-native species of game fish introduced into the reservoir for sport fishing and no native fish species occurring in San Vicente Reservoir. The sensitive southwestern pond turtle (*Clemmys marmorata pallida*) has been reported from San Vicente Reservoir, but was not observed during surveys conducted for the Carryover Storage and San Vicente Reservoir include osprey (*Pandion haliaetus*), bald eagle (*Haliaeetus leucocephalus*), and belted kingfisher (*Ceryle alcyon*); however, the latter two species were not observed during surveys conducted for the Carryover Storage and San Vicente

Water quality analysis using calibrated models (Flow Science Incorporated 2012a, 2012b), predicted that mixing of purified water into San Vicente Reservoir would: (1) increase the hypolimnetic anoxia period-the number of days the deepest, coldest layer in the lake is oxygen-poor-by 4 percent; (2) increase average surface algal growth (increase surface chlorophyll-a concentration by 0.6 mg/L); and (3) decrease average water clarity (increase Secchi depth by 0.5 meter). The latter two effects are related, as increased surface algal concentration would decrease water quality (the depth at which a patterned disk can be clearly seen). These changes to water quality in San Vicente Reservoir are not expected to result in any adverse effects on southwestern pond turtle or sensitive birds that forage over the reservoir, as the changes are slight.

5.3.2.2 Central Area

Water Reclamation/Advanced Water Purification Facility at Harbor Drive (WR/AWPF-CC-HD)

Potential direct impacts to sensitive species from the proposed WR/AWPF-CC-HD could be avoided by locating the proposed facility in currently developed parts of the site. Database occurrence records overlapping the WR/AWPF-CC-HD site are all large areas centered outside of the site, and likely do not indicate presence of those species in the WR/AWPF-CC-HD site itself.



Sludge Pipeline from the WR/AWPF-CC-HD to the Point Loma WWTP (SP)

Potential direct impacts to sensitive species from the proposed SP outside of Naval Base Point Loma would be avoided by locating the pipeline in existing streets. Use of directional drilling construction or existing subterranean pipelines between Gatchall Road and San Gorgonio Street in Naval Base Point Loma could avoid most potential impacts to sensitive species from the proposed SP. Along Gatchall Road, potential impacts to cliff spurge, San Diego sand aster, sea dahlia, and aphanisma could be avoided by locating the SP in Gatchall Road or disturbed areas along its shoulders. The potential for impacts to Quino checkerspot butterfly in that area is low, as the occurrence record for that species is dated 1936.

The potential for impacts to sensitive species from proposed reductions in the discharge from the Point Loma WWTP is low. In 2013 (the most recent year for which data are publicly available), the Point Loma WWTP discharged an average of 144 mgd of treated wastewater to the Point Loma Ocean Outfall (PLOO). Under the proposed Pure Water Program, this discharge would be reduced by up to 83 mgd. The PLOO extends approximately 4.5 miles offshore and discharges in approximately 330 feet of water.

The City conducts sampling of sediments, water, benthic animal diversity, and marine animal tissue annually around the PLOO and throughout the Point Loma area. Data from 2013 indicate that the treated wastewater plume from the PLOO is restricted to deep, offshore waters, and that discharge from the PLOO does not affect the abundance or diversity of benthic invertebrates and fish, concentrations of metals or other chemicals in animal tissues, or water quality (clarity or chemistry) compared to the general southern California marine environment. Reducing the discharge from the PLOO would not result in adverse effects to sensitive marine species, as the current discharge of treated wastewater does not apparently significantly affect the marine environment around the PLOO. If any, impacts to sensitive species from reduced discharges at the PLOO could be positive, resulting in reduced inputs of treated wastewater into the marine environment.

Pump Station or AWPF (AWPF-CC-MV) in Mission Valley

The potential for direct impacts to sensitive species from the proposed AWPF-CC-MV is low. Occurrence records for prairie falcon and oil neststraw cover the region of central San Diego and likely do not reflect presence of those species in the proposed site. The record for oil neststraw is dated 1883. Potential noise impacts to least Bell's vireo in the San Diego River could be avoided by scheduling work outside the breeding season, or by using noise attenuation measures during the breeding season. There is no potential for noise impacts to coastal California gnatcatcher in the MHPA, as the only MHPA areas within the 1,000-foot-wide study area for the proposed pump station/AWPF-CC-MV include no database occurrence records for coastal California gnatcatcher.

Pipeline from the WR/AWPF-CC-HD to the Pump Station/AWPF-CC-MV (P-CC)

Potential direct impacts to sensitive species from the proposed P-CC could be avoided by locating the pipeline in existing streets where possible. Potential direct impacts to sensitive



species in the San Diego River between Fenton Parkway and Camino del Rio North would be avoided by using jack-and-bore or directional drilling construction methods in that area.

The potential for noise impacts to least Bell's vireo could be low, given the high levels of ambient noise from I-8, Morena Boulevard, and Friars Road. Potential noise impacts could be further avoided by scheduling work outside of the breeding season, or by using noise attenuation measures during the breeding season. There is no potential for noise impacts to coastal California gnatcatcher in the MHPA, as the only MHPA areas within the 1,000-foot study area for the proposed P-CC include no database occurrence records for coastal California gnatcatcher.

Purified Water Pipeline from the Pump Station/AWPF-CC-MV to the PWP-NC (PWP-CC)

Potential direct impacts to sensitive species from the proposed PWP-CC could be avoided in most of the alignment by locating the proposed pipeline in existing streets. The potential for direct impacts to sensitive species other than coastal California gnatcatcher from the proposed PWP-CC is low, as occurrence records for those species are either very large areas covering the general region of eastern San Diego and La Mesa (e.g., prairie falcon, Quino checkerspot butterfly, oil neststraw), or located in suitable habitat within 500 feet of the proposed alignment but not immediately adjacent, and generally separated from it by development. Potential direct impacts to coastal California gnatcatcher below Lake Murray Dam could be avoided by using directional drilling construction methods in that area.

The potential for significant noise impacts to sensitive species in habitat adjacent to the proposed PWP-CC could be avoided by scheduling work outside the breeding season, or by using noise attenuation measures during the breeding season.

Pump Station at Lake Murray Boulevard

The potential for direct impacts to coastal California gnatcatcher, least Bell's vireo, prairie falcon, and Quino checkerspot butterfly from the proposed pump station at Lake Murray Boulevard is low, as those occurrence records cover large areas not centered on the proposed pump station site. In addition, the site does not contain suitable habitat for any of those species.

The potential for noise impacts is also low, given the high levels of ambient noise from Lake Murray Boulevard and I-8. No suitable habitat for sensitive animal species is within 500 feet of the proposed pump station site.

5.3.2.3 South Bay Area

Advanced Water Purification Facility at the South Bay Water Reclamation Plant (AWPF-SB)

The potential for impacts to sensitive species from the proposed AWPF-SB is low. Database occurrence records for coastal California gnatcatcher overlap parts of the proposed site from adjacent suitable habitat areas, and occurrence records for tiger beetle species are general to the entire area of the southwest county. The proposed site is currently developed and disturbed, and potential for sensitive species to occur is low.



Noise impacts to coastal California gnatcatcher and least Bell's vireo could be avoided by scheduling construction outside of the breeding season, or by using noise attenuation measures during the breeding season if project noise exceeded allowed thresholds.

The potential for impacts to sensitive species from the minimization of treated wastewater flows to the South Bay Outfall is low. In 2013 (the most recent year for which data are publicly available), the South Bay Water Reclamation Plant discharged 3.22 mgd of treated wastewater to the South Bay Outfall. Under the proposed Pure Water Program, this discharge would be reduced to nearly 0 mgd, as the proposed AWPF-SB would handle the entire 15 mgd capacity of the South Bay Water Reclamation Plant. The South Bay Ocean Outfall (SBOO) extends approximately 3.5 miles offshore and discharges in approximately 100 feet of water.

Discharge at the SBOO includes suspended solids (measured in milligrams per Liter), grease and oil (milligrams per Liter), and trace quantities (micrograms per Liter) of metals such as aluminum, lead, iron, zinc and copper. In 2013, these metals were found at similar concentrations in fish tissue samples taken from the SBOO and greater than 5 miles from the SBOO. Concentrations of total suspended solids and grease and oil were similar in water samples taken at the SBOO and greater than 10 miles from the SBOO. Discharges of coliform bacteria and chlorides from the SBOO did exceed daily limits on a few occasions in 2013. Chloride is not considered a health threat.

Reducing outflows from the SBOO to nearly 0 mgd would have no potential adverse effects on sensitive species, as current discharges do not apparently significantly affect levels of suspended solids, grease and oil, metals, or hundreds of other chemical compounds for which the City samples in annual monitoring of SBOO discharges. If any, impacts to sensitive species from reduced discharges at the SBOO could be positive, resulting in reduced inputs of coliform bacteria, suspended solids, and oil and grease into the marine environment.

Wastewater Forcemain from National City to the AWPF-SB (WF-SB)

Most potential direct impacts to sensitive species from the proposed WF-SB could be avoided by locating the proposed pipeline in existing streets. Potential for impacts from the WF-SB is highest at the northern end of Bay Boulevard, between Main Street and Saturn Boulevard, and at the Tijuana River between Saturn Boulevard and Sunset Avenue. Impacts would be avoided by locating the WF-SB in existing streets at the north end of Bay Boulevard, and by using jack-and-bore or directional drilling construction methods between Main Street and Saturn Boulevard and in the Tijuana River. The potential for impacts to light-footed Ridgway's rail and least Bell's vireo at those locations, respectively, is high using open trench construction.

Potential noise impacts to sensitive species in adjacent habitat could be avoided by scheduling work outside of the breeding season, or by using noise attenuation measures during the breeding season.

Reservoir Outfall/Discharge Structure at Otay Reservoir (ROD-SB)

The potential for direct impacts to sensitive species from the proposed ROD-SB is low. The database occurrence records that overlap the site are large, ill-defined records covering the general area of Otay Reservoir and its environs. The proposed ROD-SB site is currently undeveloped, but it is small, adjacent to a road, and includes non-native vegetation and only a small area of habitat suitable for the species with occurrence records in it.

Potential noise impacts to coastal California gnatcatcher could be avoided by scheduling work outside of the breeding season, or by using noise attenuation measures during the breeding season.

The potential for impacts to sensitive species from proposed blending of purified water from the ROD-SB with raw water in Otay Reservoir is low. Studies performed by Flow Science Incorporated that modeled the effects of purified water mixing at San Vicente Reservoir found that adding purified water to San Vicente Reservoir would have small effects on the hypolimnetic anoxia period, the surface algal concentration, and the surface water clarity (see discussion for the proposed ROD-NC, above). Assuming purified water mixing at Otay Reservoir would have similar effects, the potential for these changes to adversely affect sensitive species (southwestern pond turtle, and open water foragers such as osprey) that might be present in Otay Reservoir is low. There are no native fish species in Otay Reservoir.

Purified Water Pipeline from the AWPF-SB to Otay Reservoir (PWP-SB)

Potential direct impacts to sensitive species from the proposed PWP-SB could be minimized by locating the pipeline in existing streets where possible, and by using directional drilling construction methods in the Tijuana River between Camino de la Plaza and I-5. Siting the proposed pipeline in the existing Wiley Road in Otay Valley would further reduce the potential for direct impacts to sensitive species in that undeveloped area. Most of the occurrence records immediately adjacent to the proposed PWP-SB alignment in Otay Valley are least Bell's vireo in riparian areas along the Otay River, and coastal California gnatcatcher on the north slope of Otay Valley. These areas are avoided by the conceptual alignment in Wiley Road. Few of the occurrence records for sensitive plant species that overlap the 1,000-foot-wide study area or 0.5-mile extents around the alignment are located in the proposed alignment itself, and thus do not indicate a high potential for impacts to those species.

The potential for direct impacts to Quino checkerspot butterfly is moderate in eastern Otay Valley; however, most recent occurrence records are located to the south of the proposed PWP-SB, on the southern slopes of Otay Valley. Pre-construction surveys and avoidance of suitable habitat patches by realigning the pipeline or using directional drilling construction methods could further reduce the potential for impacts to Quino checkerspot butterfly.

Potential noise impacts to sensitive animal species in adjacent habitat could be avoided by scheduling work outside of the breeding season, or by using noise attenuation measures during the breeding season.



Pump Stations

There is low potential for any sensitive species to occur in the proposed pump station sites, as most of the two sites is currently developed and non-native vegetation. Potential direct impacts to sensitive species could be avoided by locating the pump station in currently developed parts of the site.

Potential noise impacts to sensitive species in surrounding habitat could be avoided by scheduling work outside of the breeding season, or using noise attenuation measures during the breeding season.

5.3.3 Mitigation and Permitting Requirements

Compliance with City, County, and Chula Vista MSCP Subarea Plans would provide individual projects with incidental take permits for covered species on lands included in an MSCP Subarea Plan. For lands not included in an MSCP Subarea Plan, such as the San Diego Bay NWR and MCAS Miramar, incidental take permits from USFWS would be required for unavoidable impacts to listed species. Compliance with MSCP Subarea Plans would provide sufficient avoidance and mitigation for impacts to other non-listed covered species, including compensation for habitat loss.

Avoidance of physical and noise disturbance to nests through timing work outside of breeding season(s), and/or pre-construction surveys, avoidance buffers, and noise monitoring and attenuation are requirements of all MSCP Subarea Plans for protection of avian species. Clearance surveys and exclusion measures, if necessary, are typically required for protection of reptile and mammal species, though these measures are not specified in plans.

Avoidance and translocation are required for Narrow Endemic plant species by all MSCP Subarea Plans. Other sensitive plant species are generally protected either by restrictions on the proportion of the population that may be impacted, or by compensatory mitigation requirements.

5.4 WILDLIFE CORRIDORS AND LINKAGES

The proposed Pure Water Program was analyzed for potential impacts to wildlife core and linkage areas identified in the San Diego, County, and Chula Vista MSCP Subregional Plans. Core Areas are identified in the MSCP Subregional Plan as generalized areas supporting a high density of sensitive species and habitats. Linkage areas are identified in the MSCP Subregional Plan as generalized areas where existing open space or habitat patches allow for wildlife movement and dispersal between Core Areas. Core and Linkage Areas are not all currently included in preserves assembled under MSCP Subarea plans, as not all lands identified in the generalized MSCP mapping of Core and Linkage areas are suitable for preservation.

The conceptual alignments of the pipelines cross small creeks and side drainages in areas such as Otay Valley, Tecolote Canyon, and Mission Valley. Proposed pipelines could cause temporary impacts to local movement corridors located in such small creeks and side drainages during construction.



5.4.1 Potential Wildlife Corridor/Linkage Impacts

5.4.1.1 North City Area

AWPF north of Eastgate Mall and east of I-805 (AWPF-NC)

The proposed AWPF-NC site is within the MSCP core area in Kearny Mesa, except for the extreme southeast corner of the site. The site is currently undeveloped and construction of the AWPF-NC would impact undeveloped land mapped as non-native grassland. Impacts to the MSCP core area from construction of the proposed AWPF-NC would be permanent.

North City Water Reclamation Plant Upgrades

The North City Plant is entirely within the MSCP core area in Kearny Mesa. The site is currently developed as the North City Plant and plant upgrades would not impact native habitat.

Wastewater Forcemain and Brine Pipeline from the NCWRP to the Proposed Pump Station at Sherman Street (WFBP)

The conceptual alignment of the WFBP is within the MSCP core areas in Kearny Mesa between Eastgate Mall and west of I-805 on Governor Drive at Greenwich Drive. It is within the MSCP core areas in San Clemente Canyon along Genesee Avenue between SR 52 and the top of the canyon near Appleton Street. Except for Genesee Avenue, lands in this area are undeveloped. Construction of the WFBP outside of the existing Genesee Avenue alignment would impact MSCP core area. Unavoidable impacts to the MSCP core and linkage area from construction of the proposed WFBP would be temporary.

Purified Water Pipeline from the NCWRP to San Vicente Reservoir (PWP-NC)

The conceptual alignment of the PWP-NC is within the MSCP core area in Kearny Mesa from Eastgate Mall to SR 52 except for two locations near the Miramar Landfill. MSCP vegetation mapping does not include MCAS Miramar; however, these areas are presumed to support chamise chaparral, non-native grassland, riparian scrub/forest in Rose Canyon, developed land, and disturbed land. Construction of the PWP-NC in this area would impact MSCP core area in Kearny Mesa.

The conceptual alignment of the PWP-NC is within the MSCP core area northwest of Tierrasanta in Elanus Canyon. Lands in this area are partly developed, and the conceptual alignment of the PWP-NC is located in Clairemont Mesa Boulevard and in disturbed areas alongside existing development at the upper edge of Elanus Canyon. Construction of the proposed PWP-NC in the current conceptual alignment could avoid impacts to the MSCP core area. Construction of the PWP-NC farther downslope in Elanus Canyon could impact undeveloped and undisturbed habitat in the MSCP core area.

The conceptual alignment of the PWP-NC is adjacent to MSCP core area along Tierrasanta Boulevard northeast of the Admiral Baker Golf Course. The conceptual alignment is in



Tierrasanta Boulevard at this location and would not impact MSCP core area if it were constructed in the existing street. Construction of the PWP-NC outside of the existing Tierrasanta Boulevard alignment could impact MSCP core area.

The conceptual alignment of the PWP-NC is within the MSCP linkage area in the San Diego River east of the Admiral Baker Golf Course. Lands in this area are mostly developed except for the San Diego River and the slopes north of it at the terminus of Tierrasanta Boulevard, and the slopes south of it east of the quarry. Construction of the proposed PWP-NC would impact MSCP linkage area on the slopes north of the San Diego River and in the River itself. The remainder of the proposed PWP-NC alignment in this area is in Mission Gorge Road and construction of it would not impact MSCP linkage area. If the PWP-NC was constructed north of Mission Gorge Road, it could impact MSCP linkage area east of the quarry.

The conceptual alignment of the PWP-NC is within the MSCP core area in Mission Trails Regional Park. The conceptual alignment in Mission Gorge Road and construction of the PWP-NC in that alignment would not impact MSCP core area. Construction of the PWP-NC outside of Mission Gorge Road through Mission Trails Regional Park could impact native habitat in the MSCP core area. The conceptual alignment of the PWP-NC is within the MSCP core area in Mission Trails Regional Park where West Hills Parkway crosses the San Diego River. The current alignment is west of West Hills Parkway at this location and could impact undeveloped upland and riparian habitat in the MSCP core area.

The conceptual alignment of the PWP-NC is within the MSCP core area in the San Diego River along Carlton Oaks Drive at the Carlton Oaks Country Club; however, all lands along the alignment are developed in this location. Construction of the proposed PWP-NC south of existing development on Carlton Oaks Drive could impact MSCP core area in the San Diego River, otherwise, no impact to the MSCP core area would occur at this location.

The conceptual alignment of the PWP-NC is within the MSCP core area in the San Diego River at SR 67. Lands in this area are mostly undeveloped and are mapped as non-native grassland and southern arroyo willow riparian forest. The conceptual alignment of the PWP-NC is currently located in Lakeside Avenue and would not impact undeveloped land in MSCP core area if constructed in this alignment. Construction of the PWP-NC outside of Lakeside Avenue in this location could result in impacts to undeveloped land in MSCP core area.

The conceptual alignment of the PWP-NC is within the MSCP core area in San Vicente Creek and around San Vicente Reservoir, from Vigilante Road to the ROD-NC. Lands in this area are mostly developed along Moreno Drive and undeveloped between the proposed pump station and the ROD-NC. Construction of the proposed PWP-NC in Moreno Drive would not impact undeveloped land in MSCP core area. Construction of the PWP-NC between the proposed pump station and the proposed ROD-NC could impact undeveloped native habitat in the MSCP core area. This area is mapped as chamise chaparral with patches of southern coast live oak riparian forest.

Unavoidable impacts to the MSCP core and linkage areas from construction of the proposed PWP-NC would be temporary.



Pump Stations

The proposed pump station at Moreno Avenue is entirely within the MSCP core area around San Vicente Reservoir. The extreme southern corner of the proposed pump station at Sherman Street is within the MSCP linkage area in the San Diego River. The proposed pump stations at Mission Bay Drive and Mission Montana Drive are not within any MSCP core or linkage area. Unavoidable impacts to the MSCP core and linkage areas from construction of proposed pump stations at Sherman Street and Moreno Avenue could be permanent.

Reservoir Outfall/Discharge at San Vicente Reservoir (ROD-NC)

The proposed ROD-NC is entirely within the MSCP core area around San Vicente Reservoir. Lands in this location are mapped as chamise chaparral and southern coast live oak riparian forest. Construction of the proposed ROD-NC could impact undeveloped lands in the MSCP core area. Unavoidable impacts to the MSCP core area from construction of the proposed ROD-NC could be permanent.

5.4.1.2 Central Area

Water Reclamation/Advanced Water Purification Facility at Harbor Drive (WR/AWPF-CC-HD)

The proposed WR/AWPF-CC-HD is not within any MSCP core or linkage area.

Sludge Pipeline from the WR/AWPF-CC-HD to the Point Loma WWTP (SP)

The conceptual alignment of the SP is within the MSCP core area on Point Loma, inside Naval Base Point Loma and the Point Loma WWTP site. Lands in this area are a mix of developed and undeveloped, and the conceptual SP alignment is mostly in undeveloped land mapped as Diegan coastal sage scrub and southern maritime chaparral. Many of these areas are adjacent to existing development and roads and are likely disturbed; however, based on MSCP mapping, construction of the proposed SP could impact undeveloped land in MSCP core area. Unavoidable impacts to the MSCP core area from construction of the SP would be temporary.

Pump Station or AWPF (AWPF-CC-MV) in Mission Valley

The site of the proposed pump station or AWPF-CC-MV is entirely within the MSCP linkage area in the San Diego River. Lands in the site are currently undeveloped and mapped as non-native grassland in the MSCP. Construction of the proposed pump station or AWPF-CC-MV could result in impacts to undeveloped land in MSCP linkage area. Unavoidable impacts to the MSCP linkage area from construction of the proposed pump station or AWPF-CC-MV could be permanent.

Pipeline from the WR/AWPF-CC-HD to the Pump Station/AWPF-CC-MV (P-CC)

The conceptual alignment of the P-CC is within the MSCP linkage area in the San Diego River at Morena Boulevard and between Fenton Parkway and Camino del Rio North. Vegetation in these



areas is mapped as riparian forest/woodland. The conceptual P-CC is in Morena Boulevard and Friars Road and would not impact MSCP linkage area if constructed in those existing streets and bridge. Construction of the P-CC outside of Morena Boulevard and Friars Road could result in impacts to undeveloped land in MSCP linkage area in the San Diego River.

The conceptual alignment of the P-CC between Fenton Parkway and Camino del Rio North is in undeveloped land mapped as southern riparian woodland. There is no existing bridge or other developed corridor across the San Diego River at this point. Construction of the proposed P-CC could result in impacts to undeveloped land in MSCP linkage area, unless jack-and-bore or directional drilling methods were used. Unavoidable impacts to the MSCP linkage area from construction of the proposed P-CC would be temporary.

Purified Water Pipeline from the Pump Station/AWPF-CC-MV to the PWP-NC (PWP-CC)

The conceptual alignment of the PWP-CC is within the MSCP linkage area in the San Diego River from the proposed pump station/AWPF-CC-MV site east to Mission Gorge Road. Most lands in this area are developed or disturbed and the conceptual PWP-CC alignment is in Camino del Rio North. Construction of the proposed PWP-CC north of Camino del Rio North between I-805 and Mission Gorge Road could impact southern riparian forest in MSCP linkage area. Otherwise, construction of the proposed PWP-CC would not impact the MSCP linkage area in this location.

The conceptual alignment of the PWP-CC is within the MSCP core area in the San Diego River at SR 67. Lands in this area are developed on both sides of SR 67 south of the San Diego River, and undeveloped in the River. The conceptual alignment of the PWP-CC is located east of SR 67 where it crosses the river and would impact southern arroyo willow riparian forest in MSCP core area if it were constructed in this location, unless by jack-and-bore or directional drilling methods. If the proposed PWP-CC crossed the San Diego River on the existing SR 67 bridge, it would not impact undeveloped land in MSCP core area. Unavoidable impacts to the MSCP core area in the San Diego River at SR 67 from construction of the proposed PWP-CC would be temporary.

Pump Station at Lake Murray Boulevard

The proposed pump station site at Lake Murray Boulevard is not within any MSCP core or linkage area.

5.4.1.3 South Bay Area

Advanced Water Purification Facility at the South Bay Water Reclamation Plant (AWPF-SB)

The proposed AWPF-SB is not within any MSCP core or linkage area.

Wastewater Forcemain from National City to the AWPF-SB (WF-SB)

The conceptual alignment of the WF-SB is within the MSCP core area in the Sweetwater River estuary, north of SR 54. Lands in this area are mostly developed east of I-5, where the proposed WF-SB alignment is located. Construction of the WF-SB in developed lands adjacent to the San Diego Trolley would not impact habitat in the MSCP core area. The current alignment crosses the Sweetwater River on the existing Trolley bridge and would not impact open water habitat in the MSCP core area.

The conceptual alignment of the WF-SB is within the MSCP linkage area south of the Sweetwater River. Lands in this area are developed except in Paradise Creek. The conceptual alignment of the WF-SB currently crosses Paradise Creek and could impact open water and saltbush scrub habitats in the MSCP linkage area unless constructed using jack-and-bore or directional drilling methods.

The conceptual alignment of the WF-SB is wholly or partially within the MSCP core area in Sweetwater Marsh along Bay Boulevard near Lagoon Drive. Lands in this area are currently a mix of developed, disturbed land, Diegan coastal sage scrub, and mudflat, and freshwater marsh. The conceptual alignment is currently in Bay Boulevard and would not impact habitat in the MSCP core area if constructed in the existing street. Construction of the proposed WF-SB outside of Bay Boulevard would impact habitat in the MSCP core areas in Sweetwater Marsh. Unavoidable impacts to the MSCP core area in Sweetwater Marsh from construction of the WF-SB would be temporary.

The conceptual alignment of the WF-SB is within the MSCP core area along the southern end of Bay Boulevard. Lands in this area are disturbed and developed as salt ponds and vacant residential lots. The salt ponds are mapped in the MSCP as saltpan. The alignment is currently located in Bay Boulevard and would not impact habitat in the MSCP core area. Construction of the WF-SB east of Bay Boulevard would impact only disturbed land, and construction west of Bay Boulevard could impact salt ponds.

The conceptual alignment of the WF-SB is within the MSCP core and linkage area in the Otay River estuary between Main Street and Canal Street. Lands in this area are undeveloped and mapped as disturbed except in the Otay River where they are mapped as freshwater marsh and mule fat scrub. The conceptual alignment of the WF-SB is located in undeveloped land in this area, and would impact disturbed land and native marsh and riparian scrub in MSCP core and linkage areas. Impacts to native habitat in the Otay River could be avoided by using jack-and-bore or directional drilling methods. Unavoidable impacts to disturbed land and native habitat in the MSCP core and linkage areas in the Otay River estuary from construction of the proposed WF-SB would be temporary.

The conceptual alignment of the WF-SB is within the MSCP core area in the Tijuana River at Hollister Street. Lands in this area are undeveloped and mapped as southern riparian woodland, non-native riparian, developed, and agriculture. The conceptual alignment of the WF-SB is currently located in Hollister Street and would not impact habitat in the MSCP core area if constructed in the existing street. Construction of the proposed WF-SB outside of Hollister Street



could impact habitat in the MSCP core area. Unavoidable impacts to habitat in the MSCP core area in the Tijuana River from construction of the proposed WF-SB would be temporary.

The conceptual alignment of the WF-SB is within the MSCP core area along Monument Road west of the proposed AWPF-SB. Lands in this area are undeveloped and mapped as southern riparian woodland, mule fat scrub, baccharis-dominated Diegan coastal sage scrub, maritime succulent scrub, non-native riparian, and Diegan coastal sage scrub. The alignment is currently located in Monument Road and would not impact habitat in the MSCP core area if constructed in the existing street. Construction of the WF-SB outside of Monument Road in this area could result in impacts to habitat in the MSCP core area. Unavoidable impacts to habitat in the MSCP core area in the Tijuana River Valley from construction of the proposed WF-SB would be temporary.

Reservoir Outfall/Discharge Structure at Otay Reservoir (ROD-SB)

The proposed ROD-SB is entirely within the MSCP core area at Otay Reservoir. Lands in this area are undeveloped and mapped as Diegan coastal sage scrub, freshwater marsh, open water, and eucalyptus woodland. Construction of the proposed ROD-SB could impact undeveloped land in MSCP core area. Unavoidable impacts to the MSCP core area at Otay Reservoir from construction of the proposed ROD-SB would be permanent.

Purified Water Pipeline from the AWPF-SB to Otay Reservoir (PWP-SB)

The conceptual alignment of the PWP-SB is within the MSCP core area in the Tijuana River along Dairy Mart Road from the AWPF-SB to I-5. Lands in this area are undeveloped except for streets, and mapped as a mix of native and non-native riparian vegetation types. The conceptual alignment of the PWP-SB is located in Dairy Mart Road where it crosses the Tijuana River and construction of it in that location would not impact MSCP core area. The conceptual alignment of the PWP-SB crosses riparian woodland between Camino de la Plaza and I-5 outside of any existing street alignment and could impact habitat in the MSCP core area unless jack-and-bore or directional drilling methods were used to construct it. Unavoidable impacts to the MSCP core area in the Tijuana River from construction of the PWP-SB would be temporary.

The conceptual alignment of the PWP-SB is entirely within the MSCP core areas in Otay Mesa and the Otay Valley, and along Otay Reservoir, from I-805 to the ROD-SB. Lands in this area are mostly undeveloped and support a large variety of native and non-native upland and riparian vegetation types. The conceptual alignment of the PWP-SB is located in existing streets and unpaved roads for most of its length in this area; however, construction of the proposed PWP-SB could impact MSCP core area regardless, given the overall undeveloped nature of the surroundings. Unavoidable impacts to the MSCP core areas in Otay Mesa and Otay Valley, and along Otay Reservoir from construction of the proposed PWP-SB would be temporary.

Pump Stations

The proposed pump station at Sea Vale Street is entirely within the MSCP linkage area in the Sweetwater River estuary. Lands in this area are partly developed and partly undeveloped.



Undeveloped lands include southern coastal salt marsh and saltbush scrub in the northern approximately one-fourth of the proposed pump station site, and disturbed land in the center. The eastern half and southern edge of the site are developed. Construction of the proposed pump station in the disturbed area south of the Sweetwater River would not impact native habitat in MSCP linkage area, and would not interrupt connectivity in the linkage. Construction of the proposed pump station in the northern portion of the site could impact native habitat in the MSCP linkage area.

The proposed pump station at Otay Lakes County Park is entirely within the MSCP core area at Otay Lake. The site is approximately one-third developed, and the remainder is mapped as eucalyptus woodland, Diegan coastal sage scrub, and non-native grassland. Construction of the proposed pump station in developed or eucalyptus woodland areas would not impact native habitat in the MSCP core area. Construction of the proposed pump station in Diegan coastal sage scrub or non-native grassland could impact habitat in the MSCP core area; however, these areas are isolated from similar surrounding habitat by development and eucalyptus woodland, and their habitat value is likely compromised by existing development. Unavoidable impacts to the MSCP core area at Otay Lakes County Park from construction of the proposed pump station could be permanent but less than significant.

5.4.2 Wildlife Corridor/Linkage Impact Avoidance Recommendations

5.4.2.1 North City Area

AWPF north of Eastgate Mall and east of I-805 (AWPF-NC)

Impacts to the MSCP core area at the AWPF-NC site are likely unavoidable.

North City Water Reclamation Plant Upgrades

No avoidance measures are necessary, as the site is currently developed.

Wastewater Forcemain and Brine Pipeline from the NCWRP to the Proposed Pump Station at Sherman Street (WFBP)

Construction of the proposed WFBP in existing streets could avoid impacts to the MSCP core area in San Clemente Canyon. Impacts to the MSCP core area in Kearny Mesa are likely unavoidable but would be temporary.

Wastewater Forcemain from Genesee Avenue to Mission Valley (WF-NC)

Construction of the proposed WF-NC in existing streets could avoid impacts to the MSCP linkage area at Montgomery Field. Impacts to the MSCP linkage area in the San Diego River could be avoided by using jack-and-bore or directional drilling construction methods.

Purified Water Pipeline from the NCWRP to San Vicente Reservoir (PWP-NC)

Impacts to the MSCP core and linkage areas from construction of the proposed PWP-NC could be avoided by constructing the pipeline in existing streets, and by using jack-and-bore or directional drilling construction methods where the alignment crosses the San Diego River separate from an existing roadway. Impacts to the MSCP core area between the proposed pump station at Moreno Avenue and the proposed ROD-NC could be unavoidable. Some unavoidable impacts to the MSCP core and linkage area could be permanent.

Pump Stations

No avoidance measures are necessary for the proposed pump stations at Mission Bay Drive and Mission Montana Drive. Avoidance of the extreme southern corner of the site could avoid impacts to the MSCP linkage area at Sherman Street. Impacts to the MSCP core area at Moreno Avenue could be unavoidable; however, the proposed pump station is located in a generally disturbed and developed area and would not impair wildlife movement in San Vicente Creek.

Reservoir Outfall/Discharge at San Vicente Reservoir (ROD-NC)

Impacts to the MSCP core area at the proposed ROD-NC site are unavoidable; however, the site is at the edge of a large, contiguous area of open space and the proposed ROD-NC would not impair wildlife movement or access to the shore of San Vicente Reservoir.

5.4.2.2 Central Area

Water Reclamation/Advanced Water Purification Facility at Harbor Drive (WR/AWPF-CC-HD)

No avoidance measures would be necessary.

Sludge Pipeline from the WR/AWPF-CC-HD to the Point Loma WWTP (SP)

Impacts to the MSCP core area in Naval Base Point Loma from construction of the proposed SP would likely be unavoidable using open trench construction; however, such impacts could be temporary. Impacts could be avoided by using jack-and-bore or directional drilling construction methods or using existing subterranean pipe in the portion of the alignment located in areas of native vegetation northeast of Gatchall Road.

Pump Station or AWPF (AWPF-CC-MV) in Mission Valley

Impacts to the MSCP linkage area at the AWPF-CC-MV site would likely be unavoidable. Impacts could mostly be to non-native habitats and outside the San Diego River, which is the location of the MSCP-designated wildlife movement corridor mapped in this area. The proposed AWPF-CC-MV site is peripheral to the movement corridor in the San Diego River and would not impair wildlife movement in the San Diego River.



Pipeline from the WR/AWPF-CC-HD to the Pump Station/AWPF-CC-MV (P-CC)

Construction of the proposed P-CC in existing streets and using the existing Morena Avenue Bridge over the San Diego River, as well as jack-and-bore or directional drilling construction methods in the San Diego River between Fenton Parkway and Camino del Rio North, could avoid impacts to the MSCP linkage area in the San Diego River.

Purified Water Pipeline from the Pump Station/AWPF-CC-MV to the PWP-NC (PWP-CC)

Construction of the proposed PWP-CC in Camino del Rio North, and using jack-and-bore or directional drilling methods or the existing SR 67 bridge at the San Diego River in Lakeside, could avoid impacts to the MSCP core and linkage area in the San Diego River at those locations.

Pump Station at Lake Murray Boulevard

No avoidance measures would be necessary.

5.4.2.3 South Bay Area

Advanced Water Purification Facility at the South Bay Water Reclamation Plant (AWPF-SB)

No avoidance measures would be necessary.

Wastewater Forcemain from National City to the AWPF-SB (WF-SB)

Impacts to the MSCP core and linkage area in the Sweetwater River, Otay River, Tijuana River, and along San Diego Bay from construction of the proposed WF-SB would likely be unavoidable. Impacts could be minimized by using jack-and-bore or directional drilling construction methods in the Sweetwater, Otay, and Tijuana Rivers. Unavoidable impacts would be temporary and would not result in any impairment of wildlife movement or use of MSCP linkage and core area.

Reservoir Outfall/Discharge Structure at Otay Reservoir (ROD-SB)

Impacts to the MSCP core area at Otay Reservoir from construction of the proposed ROD-SB would likely be unavoidable. Impacts to native and non-native habitat in the MSCP core area would be permanent; however, the proposed ROD-SB would not impair wildlife movement or access to the lake shore given the large amount of unobstructed lake shore on both sides of it.

Purified Water Pipeline from the AWPF-SB to Otay Reservoir (PWP-SB)

Impacts to the MSCP core area from construction of the proposed PWP-SB would likely be unavoidable; however, all impacts would be temporary and result in no permanent impairment to wildlife movement or use of native habitats in the MSCP core area in Otay Mesa and Otay Valley, or around Otay Reservoir.

Pump Stations

Construction of the proposed pump station at Sea Vale Street in the disturbed area south of the Sweetwater River would not impact native habitat in MSCP linkage area, and would not interrupt connectivity through the linkage.

Impacts to the MSCP core area in Otay Lakes County Park from construction of the proposed pump station would likely be unavoidable. Siting the proposed pump station in developed areas and eucalyptus woodland could minimize impacts to native habitat in the MSCP core area. Construction of the proposed pump station would not impair wildlife movement around Otay Reservoir, or use of high-quality native habitat, as the native habitat in the proposed pump station site is small and isolated from surrounding native habitat by development and non-native vegetation.

5.5 LOCAL HABITAT CONSERVATION PLANS AND BIOLOGICAL RESOURCES POLICIES

The proposed Pure Water Program was analyzed for potential conflicts with City, County, and Chula Vista MSCP Subarea Plans; County RPO wetland buffer requirements; the San Diego Bay NWR Comprehensive Conservation Plan/Environmental Impact Statement; the City Preliminary Draft VPHCP; the MCAS Miramar INRMP; and the Memorandum of Understanding for the Point Loma Ecological Conservation Area.

5.5.1 <u>Potential Local Policies Conflicts</u>

5.5.1.1 North City Area

AWPF north of Eastgate Mall and east of I-805 (AWPF-NC)

The proposed AWPF would not conflict with any adopted local plans or policies protecting biological resources. The site is currently non-native grassland and outside of any designated preserve.

North City Water Reclamation Plant Upgrades

The proposed upgrades to the North City Plant would not conflict with any adopted local plans or policies protecting biological resources. The site is currently developed and outside of any designated preserve.

Wastewater Forcemain and Brine Pipeline from the NCWRP to the Proposed Pump Station at Sherman Street (WFBP)

The proposed WFBP would not conflict with any adopted local plans or policies protecting biological resources if the alignment is located in existing streets. However, essential public



facilities¹ are a compatible use in the MHPA. Other City MHPA lands are adjacent to the proposed alignment in San Clemente Canyon and Tecolote Canyon; however, the conceptual alignment in existing streets would avoid these areas.

Purified Water Pipeline from the NCWRP to San Vicente Reservoir (PWP-NC)

The proposed PWP-NC would not conflict with the City MSCP Subarea Plan. The conceptual alignment crosses City MHPA in the San Diego River west of Mission Gorge and again at West Hills Parkway. All other places where the conceptual alignment is adjacent to MHPA, the proposed PWP-NC would be located in existing streets and would not impact MHPA lands. Essential public facilities are a compatible use in the City MHPA; therefore, the proposed PWP-NC would not conflict with the City MSCP Subarea Plan at these two locations. Section 1.2.2 of the City MSCP includes special MHPA Guideline B-4, which calls for the preservation of 90 percent of the San Diego ambrosia population near the San Diego River at the eastern end of Mission Gorge. The proposed PWP-NC includes a portion of the area shown in Figure 3 of the City MSCP as the location of this San Diego ambrosia population. Special MHPA Guideline B-5 in Section 1.2.2 of the City MSCP calls for active management of brown-headed cowbird in the portion of the San Diego River in central Santee. The proposed PWP-NC passes through this area along Mast Boulevard and other streets, but would not contribute to brown-headed cowbird use of that portion of the San Diego River.

The proposed PWP-NC crosses Cornerstone Lands between the proposed pump station at Moreno Avenue and the proposed ROD-NC. Cornerstone Lands are lands owned by the City Water Department that are included in the MHPA through a process of phasing in conservation easements that allow the Water Department to continue to use the lands for watershed and water utilities facilities for the benefit of water rate payers. The proposed PWP-NC is compatible with the use of Cornerstone Lands by the Water Department to the benefit of water rate payers and would not conflict with a conservation easement, should one have been placed over that portion of the San Vicente Cornerstone Lands at the time the proposed PWP-NC is constructed.

The conceptual alignment of the PWP-NC crosses land designated as PAMA in the County MSCP Subarea Plan in the San Diego River at SR 67. Construction of public infrastructure facilities is allowed outside of the preserve in the Lakeside-Metro-Jamul segment of the County MSCP Subarea Plan. Lands designated as PAMA in the County MSCP Subarea Plan are considered to have preservation value and are targeted for preservation, but are not inside the preserve.

The conceptual alignment of the PWP-NC crosses land designated as Hardline Preserve in the County MSCP Subarea Plan between the proposed pump station at Moreno Avenue and the proposed ROD-NC. Permits for temporary impacts to Hardline Preserve would require an equivalency analysis to demonstrate that revegetation/restoration of temporary impact areas would provide equivalent or superior biological resources value in the Preserve, and might require mitigation at more than 1:1. If the Hardline Preserve lands are under a conservation

¹ Essential public facilities include identified circulation element roads, major water and sewer lines, publicly owned schools, parks, libraries, and police and fire facilities (City 2012b).



easement or other restrictive covenant, allowed activities in the Hardline Preserve area would be dictated by that easement.

The conceptual alignment of the PWP-NC crosses County RPO wetland in the form of southern coast live oak riparian forest as it leaves San Vicente Creek north of the proposed pump station at Moreno Avenue. The County RPO requires buffers of 50 to 200 feet in width around wetlands. The County RPO states that where oak woodland occurs adjacent to a wetland, the required buffer shall include the entirety of the oak habitat, up to 200 feet in width. Under Section 86.605(c) of the RPO, essential public facilities and projects are exempt from the RPO if they are consistent with adopted subregional plans, have minimized encroachments into RPO lands and mitigated for impacts, result in a net gain of wetland/riparian habitat if such is impacted by the project, and do not result in destruction or reductions in area of mature riparian woodland. Construction of the proposed PWP-NC by open trench in this location could result in destruction of mature riparian woodland and could, therefore, conflict with the County RPO.

Pump Stations

The proposed pump stations at Mission Bay Drive, Sherman Street, and Mission Montana Drive would not conflict with any adopted local plans or policies protecting biological resources. The sites are currently developed and outside of any designated preserve.

The proposed pump station at Moreno Avenue is located in City San Vicente Reservoir Cornerstone Lands and City MHPA. The proposed site is currently developed and the proposed pump station would not create any new permanent impacts in preserved lands. Therefore, the proposed pump station at Moreno Avenue would not conflict with any adopted policies protecting biological resources. Cornerstone Lands are lands owned by the City Water Department that are included in the MHPA through a process of phasing in conservation easements that allow the Water Department to continue to use the lands for watershed and water utilities facilities for the benefit of water rate payers. The proposed pump station is compatible with the use of Cornerstone Lands by the Water Department to the benefit of water rate payers and would not conflict with a conservation easement, should one have been placed over that portion of the San Vicente Cornerstone Lands at the time the proposed pump station is constructed.

Reservoir Outfall/Discharge at San Vicente Reservoir (ROD-NC)

The proposed ROD-NC is located within City San Vicente Reservoir Cornerstone Lands and City MHPA. The proposed site is currently undeveloped and supports chamise chaparral vegetation. Limited water facilities are a compatible use in the MHPA; therefore, the proposed ROD-NC would not conflict with the MHPA. Cornerstone Lands are lands owned by the City Water Department that are included in the MHPA through a process of phasing in conservation easements that allow the Water Department to continue to use the lands for watershed and water utilities facilities for the benefit of water rate payers. The proposed ROD-NC is compatible with the use of Cornerstone Lands by the Water Department to the benefit of water rate payers and would not conflict with a conservation easement, should one have been placed over that portion of the San Vicente Cornerstone Lands at the time the proposed ROD-NC is constructed.



SANDAG-VD mapping shows southern coast live oak riparian forest vegetation in the proposed ROD site. The County RPO states that where oak woodland occurs adjacent to a wetland, the required buffer shall include the entirety of the oak habitat, up to 200 feet in width. Under Section 86.605(c) of the RPO, essential public facilities and projects are exempt from the RPO if they are consistent with adopted subregional plans, have minimized encroachments into RPO lands and mitigated for impacts, result in a net gain of wetland/riparian habitat if such is impacted by the project, and do not result in destruction or reductions in area of mature riparian woodland. Construction of the proposed ROD-NC could result in destruction of mature riparian woodland and would, therefore, conflict with the County RPO.

5.5.1.2 Central Area

Water Reclamation/Advanced Water Purification Facility at Harbor Drive (WR/AWPF-CC-HD)

The proposed WR/AWPF-CC-HD would not conflict with any adopted local plans or policies protecting biological resources. The site is currently developed and outside of any designated preserve.

Sludge Pipeline from the WR/AWPF-CC-HD to the Point Loma WWTP (SP)

The conceptual alignment of the SP is inside the Point Loma Ecological Conservation Area (PLECA) in Naval Base Point Loma. The PLECA is established under a memorandum of understanding (MOU) among federal agencies and the City. The MOU is a non-regulatory agreement regarding management of biological resources on Point Loma. Under the MOU, construction of new utilities within the PLECA is considered new construction and should be routed in existing roads and utility corridors if possible. The PLECA Working Group will provide recommendations regarding mitigation requirements for such projects.

For portions of the proposed alignment that could impact native Diegan coastal sage scrub and southern maritime chaparral in Naval Base Point Loma, a determination of consistency with Section 30240 of the Coastal Act would be required. Section 30240 of the Coastal Act protects environmentally sensitive habitat areas from significant disruption of habitat values, and allows only uses dependent on those resources within those areas.

Pump Station or AWPF (AWPF-CC-MV) in Mission Valley

The proposed pump station/AWPF-CC-MV would not conflict with any adopted local plans or policies protecting biological resources. The site is mapped as non-native grassland and disturbed land, and is not in the City MHPA. The conceptual location of this facility overlaps at its northern edge with a City mitigation site in the San Diego River; however, the practical development area for this facility is in Tier IIIb habitat outside of the San Diego River and outside of the City mitigation site.

Pipeline from the WR/AWPF-CC-HD to the Pump Station/AWPF-CC-MV (P-CC)

The proposed P-CC would not conflict with any adopted local plans or policies protecting biological resources. The conceptual alignment is located entirely within existing streets except between Fenton Parkway and Camino del Rio North, where it crosses City MHPA. Essential utility infrastructure is a compatible use in the MHPA.

Purified Water Pipeline from the Pump Station/AWPF-CC-MV to the PWP-NC (PWP-CC)

The proposed PWP-CC would not conflict with any adopted local plans or policies protecting biological resources. The alignment crosses City MHPA in Navajo Canyon and County PAMA lands in the San Diego River at SR 67. Essential utility infrastructure is a compatible use in the City MHPA, and construction of public infrastructure facilities is allowed outside of the preserve in the Lakeside-Metro-Jamul segment of the County MSCP Subarea Plan.

The conceptual alignment of the PWP-CC crosses southern arroyo willow riparian forest in the San Diego River at SR 67. Under Section 86.605(c) of the RPO, essential public facilities and projects are exempt from the RPO if they are consistent with adopted subregional plans, have minimized encroachments into RPO lands and mitigated for impacts, result in a net gain of wetland/riparian habitat if such is impacted by the project, and do not result in destruction or reductions in area of mature riparian woodland. Construction of the proposed PWP-CC by open trench in this location could result in the destruction of mature riparian woodland and would, therefore, conflict with the County RPO.

Pump Station

The proposed pump station at Lake Murray Boulevard would not conflict with any adopted local plans or policies protecting biological resources. The site is eucalyptus woodland and disturbed land, and surrounding land is developed.

5.5.1.3 South Bay Area

Advanced Water Purification Facility at the South Bay Water Reclamation Plant (AWPF-SB)

The proposed AWPF-SB would not conflict with any adopted local plans or policies protecting biological resources. The site is currently developed and disturbed land, and outside of any designated preserve. County preserved lands in the Tijuana River Valley Regional Park are immediately adjacent to the site on the west.

Wastewater Forcemain from National City to the AWPF-SB (WF-SB)

The conceptual alignment of the WF-SB passes through lands in the San Diego Bay NWR, Tijuana River Valley Regional Park, and City MHPA. The conceptual alignment is currently located in existing streets for most of its length and thus would avoid impacts to resources in these preserve areas.



The conceptual alignment crosses undeveloped lands in the San Diego Bay NWR and City MHPA in the Otay River, between Main Street and Saturn Boulevard. The Comprehensive Conservation Plan/Environmental Impact Statement (CCP/EIS) for the San Diego Bay NWR does not include public utility infrastructure. Proposed impacts in the San Diego Bay NWR would likely require analysis under NEPA. Final NEPA determination would depend on the nature of the proposed impacts. Essential public utility infrastructure is a compatible use in the City MHPA.

In the remainder of preserved areas, the alignment is in either existing developed roads, or in undeveloped rights-of-way that are outside of preserved lands. In these places, the proposed WF-SB in its current alignment would not conflict with preserve plans.

Reservoir Outfall/Discharge Structure at Otay Reservoir (ROD-SB)

The proposed ROD-SB site is within the City MHPA, but outside any other designated preserve. The City MSCP Subarea Plan includes limited water facilities and other essential public facilities among compatible land uses in the MHPA. Essential public facilities in the MHPA are subject to siting and design policies that minimize impacts to sensitive biological resources, including avoidance of wetlands unless infeasible. Unavoidable impacts must be mitigated. The proposed ROD-SB would likely have unavoidable impacts on wetlands in the MHPA which would require mitigation.

Purified Water Pipeline from the AWPF-SB to Otay Reservoir (PWP-SB)

The conceptual alignment of the PWP-SB passes through City MHPA and County lands in Tijuana River Valley Regional Park between Camino de la Plaza and I-5. Section 1.2.1 of the City MSCP includes MHPA Guidelines for the southern area of the MHPA. Guideline A-19 calls for the retention and enhancement of existing riparian habitat along the Tijuana River. The proposed PWP-SB would affect riparian habitat in the Tijuana River if surface-disturbing construction methods were employed. Guideline A-1 calls for improving the wildlife and pedestrian corridor in Dennery Canyon by incorporating two culverts in Dennery Road. The proposed PWP-SB would not conflict with the goal of placing culverts under Dennery Road, as the proposed pipeline could either cross Dennery Canyon using the same bridge or culvert used by Dennery Road, or pass under it in a tunnel. Section 1.5.3 of the City MSCP includes MHPA Guidelines for the Otay Mesa area. Guideline NW-1 calls for protection of areas of succulent scrub in the northeast corner of California Terraces. The proposed PWP-SB follows Dennery Road around the west and north of California Terraces, and would not affect the northeast corner of that development. Guideline NW-2 calls for regular patrols of Dennery Canyon to prevent illegal encampments and trash dumping from degrading the wildlife corridor. The proposed PWP-SB crosses Dennery Canyon at Dennery Road, but would not conflict with regular patrolling of Dennery Canyon.

Essential public utility infrastructure is a compatible use in the City MHPA. The County MSCP Subarea Plan requires a major amendment process for infrastructure development in preserve areas. Major amendments require approval from the wildlife agencies.

The conceptual alignment of the PWP-SB passes through County preserve lands in the Otay Ranch Preserve east of SR 125. The conceptual alignment in this area generally follows the unpaved Wiley Road. Proposed impacts in this area may require a major amendment under the County MSCP Subarea Plan.

The conceptual alignment of the PWP-SB is inside the City of Chula Vista Otay Ranch Preserve, from approximately 1.25 miles east of SR 125 to the boundary of City lands at Otay Reservoir. The proposed PWP-SB would be a Future Facility located in 100-percent Conservation Area. Temporary impacts from Future Facilities are not limited in extent, but are subject to the City of Chula Vista Narrow Endemic Species Policy, and Facilities Siting Criteria described in the Chula Vista MSCP Subarea Plan. All temporary impacts from Future Facilities must be revegetated. Portions of the proposed PWP-SB in Chula Vista would be subject to the Narrow Endemic Species Policy, except inside the development areas of Covered Projects, where the PWP-SB would be subject to any adopted project-specific Narrow Endemic Species requirements.

Pump Stations

The proposed pump station at Sea Vale Street would not conflict with any adopted local plans or policies protecting biological resources. The site is currently developed and disturbed land, and outside of any designated preserve.

The proposed pump station at Otay Lakes County Park is located partially within County lands and partially within City lands. County lands in the site are in Otay Lakes County Park, but designated as Take-Authorized Area in the County MSCP Subarea Plan. City lands in the site are designated Otay Lakes Cornerstone Lands and in the MHPA. Most of the proposed pump station site is currently developed as a water treatment plant. Cornerstone Lands are lands owned by the City Water Department and placed in the MHPA through a process of phasing in conservation easements that allow the Water Department to continue to use the lands for watershed and water utilities facilities to the benefit of water rate payers. The proposed pump station at Otay Lakes County Park is a water utilities facility for the benefit of water rate payers and therefore would not conflict with a Cornerstone Lands conservation easement, should one have been placed over that portion of the Otay Lakes Cornerstone Lands at the time of construction.

5.5.2 Local Policies Conflict Avoidance Recommendations

5.5.2.1 North City Area

AWPF north of Eastgate Mall and east of I-805

No avoidance measures would be necessary.

North City Water Reclamation Plant Upgrades

No avoidance measures would be necessary.

Wastewater Forcemain and Brine Pipeline from the NCWRP to the Proposed Pump Station at Sherman Street

Temporary impacts to MHPA between Miramar Road and Nobel Drive would likely be unavoidable; however, essential public facilities are a compatible use in the City MHPA. Locating the proposed WFBP in existing streets where possible could avoid temporary impacts to MHPA in San Clemente Canyon and Tecolote Canyon, although essential public facilities are a compatible use in the City MHPA.

Purified Water Pipeline from the NCWRP to San Vicente Reservoir (PWP-NC)

Locating the proposed PWP-NC in existing streets could avoid impacts to MHPA lands for most of the alignment. Temporary impacts to MHPA in the San Diego River could be avoided by use of jack-and-bore or directional drilling construction methods in those locations, although essential public facilities are a compatible use in the City MHPA.

Routing the proposed PWP-NC around the southern coast live oak riparian forest in northwest San Vicente Creek, or using directional drilling construction methods at that location could avoid potential conflicts with County RPO wetland buffer requirements that prohibit destruction of mature riparian woodland.

Routing the proposed pipeline along the existing access road at the top of the steep slope southeast of the dam at San Vicente Reservoir could avoid the County Hardline Preserve lands between the proposed pump station at Moreno Avenue and the proposed ROD-NC. Use of directional drilling for the approximately 0.18-mile segment of the alignment located in County Hardline Preserve could avoid potential conflicts with the County MSCP Subarea Plan.

Pump Stations

No avoidance measures would be necessary for the proposed pump stations at Mission Bay Drive, Sherman Street, and Mission Montana Drive.

Locating the proposed pump station at Moreno Avenue in existing developed areas could avoid new impacts to the MHPA, although limited water facilities are compatible uses in the City MHPA. The City may choose to process an MHPA Boundary Line Adjustment or Correction to remove this area from the MHPA.

Reservoir Outfall/Discharge at San Vicente Reservoir (ROD-NC)

Impacts to City MHPA Cornerstone Lands from the proposed ROD-NC would be unavoidable but allowed under the terms under which Cornerstone Lands are conserved. Limited water facilities are a compatible use in the City MHPA; however, the City may choose to process an MHPA Boundary Line Correction to remove the ROD-NC from the MHPA. Relocating the proposed ROD-NC to avoid the southern coast live oak riparian forest mapped in the proposed site could avoid potential conflicts with County RPO wetland buffer requirements that prohibit destruction of mature riparian woodland.



5.5.2.2 Central Area

Water Reclamation/Advanced Water Purification Facility at Harbor Drive (WR/AWPF-CC-HD)

No avoidance measures are necessary.

Sludge Pipeline from the WR/AWPF-CC-HD to the Point Loma WWTP (SP)

No avoidance measures would be necessary. Locating the proposed SP in existing roads inside the PLECA could minimize potential conflicts with the Coastal Act and the PLECA MOU. Using jack-and-bore or directional drilling construction methods, or using existing subterranean pipe in the portion of the alignment northeast of Gatchall Road could avoid impacts to sensitive native vegetation and reduce mitigation requirements.

Pump Station or AWPF (AWPF-CC-MV) in Mission Valley

No avoidance measures would be necessary.

Pipeline from the WR/AWPF-CC-HD to the Pump Station/AWPF-CC-MV (P-CC)

Locating the proposed P-CC in existing streets could avoid impacts to MHPA except in the San Diego River between Fenton Parkway and Camino del Rio North. Essential public facilities are a compatible use in the City MHPA. The portion of the proposed P-CC between Morena Boulevard and Fenton Parkway is in a portion of the San Diego River corridor designated by MHPA Guideline B-15 in City MSCP Section 1.2.3 as targeted for restoration of native vegetation as a condition of future development. The proposed pipeline would be located in Friars Road and would not result in development of any currently undeveloped lands. The proposed alignment of the P-CC does not include any areas that provide opportunities for restoration of native vegetation.

Purified Water Pipeline from the Pump Station/AWPF-CC-MV to the PWP-NC (PWP-CC)

Using jack-and-bore or directional drilling construction methods at the San Diego River, or locating the proposed PWP-CC on the existing SR 67 bridge over the San Diego River could avoid potential conflicts with County RPO wetland buffer requirements that prohibit destruction of mature riparian woodland.

Pump Station at Lake Murray Boulevard

No avoidance measures would be necessary.

5.5.2.3 South Bay Area

Advanced Water Purification Facility at the South Bay Water Reclamation Plant (AWPF-SB)

No avoidance measures would be necessary.

Wastewater Forcemain from National City to the AWPF-SB (WF-SB)

Temporary impacts to City MHPA and San Diego Bay NWR lands in the Otay River from the proposed WF-SB would likely be unavoidable. Locating the proposed WF-SB in existing streets and right-of-way in the remainder of the alignment could avoid impacts to preserved lands.

Reservoir Outfall/Discharge Structure at Otay Reservoir (ROD-SB)

Siting the proposed ROD-SB to avoid wetlands could minimize mitigation requirements under the City MSCP Subarea Plan; however, some wetland impacts would likely be unavoidable. The City may choose to process an MHPA Boundary Line Adjustment to remove the ROD-SB site from the MHPA.

Purified Water Pipeline from the AWPF-SB to Otay Reservoir (PWP-SB)

Locating the proposed PWP-SB in existing roads and disturbed areas, and avoiding all wetland and riparian areas could minimize conflicts with the Chula Vista MSCP Subarea Plan and the Otay Ranch Resource Management Plan.

Pump Stations

No avoidance measures would be necessary. The proposed pump station at Otay Lakes County Park is located in County Take-Authorized Area, and limited water facilities are a compatible use in the City MHPA. Locating the pump station in existing developed areas could minimize impacts to MHPA lands.

5.6 LAND USES WITHIN OR ADJACENT TO THE MHPA

The proposed Pure Water Program was analyzed for potential impacts through adverse edge effects to the MHPA based on the presence of MHPA lands adjacent to the proposed feature. The analysis is based on the 1997 MHPA boundaries provided by the City as a shapefile. These data do not include MHPA Boundary Line Adjustments made since 1997.

5.6.1 <u>Potential MHPA Adverse Edge Effects</u>

5.6.1.1 North City Area

AWPF north of Eastgate Mall and east of I-805 (AWPF-NC)

The proposed AWPF would not be adjacent to the MHPA.


North City Water Reclamation Plant Upgrades

The proposed upgrades to the North City Plant would occur in currently developed land. The nearest MHPA to the North City Plant site is south across Eastgate Mall, and the proposed upgrades to the North City Plant would not change the existing conditions in the site so as to increase the existing effects of the North City Plant on the MHPA.

Wastewater Forcemain and Brine Pipeline from the NCWRP to the Proposed Pump Station at Sherman Street (WFBP)

The conceptual alignment of the WFBP would be adjacent to the MHPA between Eastgate Mall and Nobel Drive, in San Clemente Canyon, and in Tecolote Canyon at Chateau Drive and at Balboa Avenue. The WFBP would be located in existing streets in San Clemente Canyon and Tecolote Canyon and would not cause adverse edge effects to the MHPA. Between Eastgate Mall and Nobel Drive, construction of the WFBP could potentially cause adverse edge effects to the MHPA including noise, lighting, toxins, invasive species, and increased human incursion. Operation of the WFBP would not cause adverse edge effects, as the pipeline would be subterranean.

Purified Water Pipeline from the NCWRP to San Vicente Reservoir (PWP-NC)

The conceptual alignment of the PWP-CC would be adjacent to the MHPA in Elanus Canyon, Shepherd Canyon, a third unnamed canyon, and along Tierrasanta Boulevard in Tierrasanta; in the San Diego River at Mission Gorge and at West Hills Parkway; along Mission Gorge Road in Mission Trails Regional Park; and between the proposed pump station at Moreno Avenue and the proposed ROD-NC.

Operation of the PWP-NC would not cause significant adverse edge effects to the MHPA, as the pipeline would be subterranean.

Construction of the PWP-NC in Shepherd Canyon, the unnamed canyon, and along Tierrasanta Boulevard in Tierrasanta, as well as along Mission Gorge Road, would not cause significant adverse edge effects to the MHPA, if the PWP-NC is in existing streets. Construction of the PWP-NC using open trench methods in Elanus Canyon, the San Diego River, and between the pump station at Moreno Avenue and the ROD-NC could potentially cause significant edge effects to the MHPA, including noise, lighting, drainage, toxins, invasive species, and increased human incursion. Construction of the PWP-NC in these areas using jack-and-bore or directional drilling methods would likely not cause adverse edge effects to the MHPA.

Pump Stations

The proposed pump stations at Mission Bay Drive, Sherman Street, and Mission Montana Drive would not be adjacent to the MHPA.

The proposed pump station at Moreno Avenue would be entirely within the MHPA; however, the site is currently developed. Changes made to the current facilities by the proposed pump station



could potentially cause new or increased adverse effects on the MHPA compared to existing effects. These adverse effects could include noise and toxins.

Reservoir Outfall/Discharge at San Vicente Reservoir (ROD-NC)

The proposed ROD-NC would be entirely within the MHPA. The site is currently undeveloped and construction and operation of the proposed ROD-NC would introduce new land uses inside the MHPA that could potentially cause adverse edge effects to the MHPA. These adverse effects could include noise, lighting, drainage, toxins, grading, invasive species, and increased human incursion.

5.6.1.2 Central Area

Water Reclamation/Advanced Water Purification Facility at Harbor Drive (WR/AWPF-CC-HD)

The proposed WR/AWPF-CC-HD would not be adjacent to the MHPA.

Sludge Pipeline from the WR/AWPF-CC-HD to the Point Loma WWTP (SP)

The conceptual alignment of the SP would be adjacent to the MHPA in the grounds of the Point Loma WWTP. The proposed SP would not introduce new uses to the Point Loma WWTP that would increase the adverse effects on the MHPA over existing levels.

Pump Station or AWPF (AWPF-CC-MV) in Mission Valley

The proposed pump station/AWPF-CC-MV would be adjacent to MHPA in the San Diego River. Construction of either proposed feature at the site could potentially cause adverse edge effects to the MHPA including noise, lighting, drainage, grading, and increased human incursion. Operation of the proposed pump station would likely not significantly increase adverse effects on the MHPA over existing ambient levels of disturbance by noise, lighting, and human presence from Camino del Rio North and I-8. Operation of the proposed AWPF-CC-MV could potentially result in higher levels of adverse effects than from the proposed pump station due to the larger size and greater scope of activities at the former facility. These effects could be substantially greater than existing ambient adverse effects on the MHPA.

Pipeline from the WR/AWPF-CC-HD to the Pump Station/AWPF-CC-MV (P-CC)

The conceptual alignment of the P-CC would be adjacent to the MHPA in the San Diego River at Morena Boulevard, and in the San Diego River between Fenton Parkway and Camino del Rio North. Operation of the P-CC would not cause adverse edge effects to the MHPA, as the pipeline would be subterranean. Construction of the P-CC in Morena Boulevard, the existing Morena Boulevard bridge, and Friars Road would not cause adverse edge effects to the MHPA in the San Diego River at Morena Boulevard. Open trench construction of the P-CC between Fenton Parkway and Camino del Rio North could potentially cause adverse edge effects to the MHPA including noise, lighting, drainage, toxins, invasive species, and increased human incursion.



Construction of the P-CC using jack-and-bore or directional drilling methods at that location could avoid potential adverse edge effects to the MHPA.

Purified Water Pipeline from the Pump Station/AWPF-CC-MV to the PWP-NC (PWP-CC)

The conceptual alignment of the PWP-CC would be adjacent to the MHPA in the San Diego River between I-15 and the confluence with Alvarado Creek, in Navajo Canyon, and below the Lake Murray Dam.

Operation of the PWP-CC would not cause adverse edge effects to the MHPA, as the pipeline would be subterranean. Construction of the PWP-CC would not cause significant adverse edge effects to the MHPA in the San Diego River, as the PWP-CC alignment is in existing streets and construction would likely not significantly increase adverse effects of noise and lighting over existing ambient levels from surrounding freeways and major surface streets.

Construction of the PWP-CC, however, could potentially cause adverse edge effects to the MHPA in Navajo Canyon and below Lake Murray Dam, including noise, lighting, drainage, toxins, invasive species, and increased human incursion.

Pump Station

The proposed pump station at Lake Murray Boulevard would not be adjacent to the MHPA.

5.6.1.3 South Bay Area

Advanced Water Purification Facility at the South Bay Water Reclamation Plant (AWPF-SB)

The proposed AWPF-SB would be adjacent to the MHPA; however, the site is currently developed as the South Bay Water Reclamation Plant. Operation of the proposed AWPF-SB could have a low potential to create additional adverse edge effects to the MHPA beyond the existing levels created by the South Bay Water Reclamation Plant.

Construction of the proposed AWPF-SB could potentially create adverse edge effects to the MHPA, including noise, lighting, drainage, and toxins.

Wastewater Forcemain from National City to the AWPF-SB (WF-SB)

The conceptual alignment of the WF-SB would be adjacent to the MHPA at the southeast shore of San Diego Bay near the Salt Works property and the Otay River, and in the Tijuana River Valley along Sunset Avenue, Hollister Street, and Monument Road.

Operation of the WF-SB would not create adverse edge effects to the MHPA, as the pipeline would be subterranean. Construction of the WF-SB in Bay Boulevard, in the existing right-of-way between Saturn Boulevard and Sunset Avenue, and in Monument Road, would not cause adverse edge effects to the MHPA.



Construction of the WF-SB by open trench methods in the Otay River could potentially cause significant adverse edge effects to the MHPA, including noise, lighting, drainage, toxins, invasive species, and increased human incursion. Construction of the WF-SB using jack-and-bore or directional drilling methods in the Otay River would likely not cause adverse edge effects to the MHPA.

Reservoir Outfall/Discharge Structure at Otay Reservoir (ROD-SB)

The proposed ROD-SB would be within the MHPA. The site is currently undeveloped and the ROD-SB would introduce a land use into the MHPA that could potentially cause adverse edge effects. Construction of the proposed ROD-SB could potentially cause adverse edge effects to the MHPA including noise, lighting, drainage, grading, toxins, and increased human incursion. Operation of the ROD-SB could potentially cause adverse edge effects to the MHPA, including noise and drainage.

Purified Water Pipeline from the AWPF-SB to Otay Reservoir (PWP-SB)

The conceptual alignment of the PWP-SB would be adjacent to the MHPA in the Tijuana River along Dairy Mart Road and between Camino de la Plaza and I-5, Dennery Road, and along Wueste Road on the west shore of Otay Reservoir.

Operation of the PWP-SB would not cause adverse edge effects to the MHPA, as the pipeline would be subterranean.

Construction of the PWP-SB in Dairy Mart Road, Dennery Road, and Wueste Road could potentially cause adverse edge effects to the MHPA above existing ambient levels of noise and lighting from existing streets and development, as well as through drainage and toxins. Construction of the PWP-SB by open trench methods between Camino de la Plaza and I-5 could potentially create adverse edge effects to the MHPA, including noise, lighting, drainage, toxins, invasive species, and increased human incursion. Construction of the PWP-SB by jack-and-bore or directional drilling methods, or routing the PWP-SB across the Dairy Mart Road bridge and along West San Ysidro Boulevard to Sunset Lane would likely not cause adverse edge effects to the MHPA.

Pump Stations

The proposed pump station at Sea Vale Street would not be adjacent to the MHPA.

The proposed pump station at Otay Lakes County Park would be within the MHPA; however, the site is currently developed as a water treatment plant. Operation of the proposed pump station would have a low potential to create adverse edge effects to the MHPA above existing levels created by the water treatment plant.

Construction of the proposed pump station could potentially create adverse edge effects to the MHPA, including noise, lighting, drainage, toxins, and increased human incursion.



5.6.2 MHPA Land Use Adjacency Guidelines

Compliance with the following Land Use Adjacency Guidelines would be required at the project level for Pure Water Program facilities identified in Section 5.6.1 as having potential to cause adverse edge effects to the MHPA.

Drainage

All new and proposed development adjacent to the MHPA must not drain directly into the preserve, and must prevent the release of toxins, chemicals, petroleum products, exotic plant materials, and other elements that might degrade or harm the natural environment or ecosystem processes within the MHPA.

This measure would potentially apply during construction, where spoils and temporary excavation could result in runoff into the MHPA.

Toxins

Land uses such as recreation and agriculture that use chemicals or generate byproducts that are potentially toxic or harmful to wildlife, habitat, or water quality must incorporate measures to reduce the impact of application or drainage of such materials into the MHPA.

This measure would potentially apply during construction, where fuels, solvents, and lubricants could be released into the MHPA.

Lighting

Lighting must be directed away from the MHPA and if necessary adequately shielded to protect the MHPA and sensitive species from night lighting.

This measure would potentially apply during construction of all facilities and during operation of above-ground facilities where lighting could be directed into the MHPA.

Noise

Uses adjacent to the MHPA must be designed to minimize noise that might impact or interfere with wildlife utilization of the MHPA.

This measure would potentially apply during construction of all facilities and during operation of above-ground facilities.

Barriers to Incursion

New development adjacent to the preserve may be required to provide barriers along MHPA boundaries to redirect public access to appropriate locations and reduce domestic animal predation in the preserve.



This measure would potentially apply during construction of all facilities, when construction personnel are on-site, and following construction when clearing for construction encourages unauthorized human entrance into formerly vegetated areas.

Invasive Species

No invasive plant species shall be introduced into areas adjacent to the MHPA.

This measure would potentially apply following construction, when areas disturbed for construction provide habitat for colonizing ruderal species that subsequently disperse into the MHPA.

Brush Management

New residential development located adjacent to and topographically above the MHPA must be set back from slope edges to incorporate Zone 1 brush management areas on the development pad and outside of the MHPA. Zone 2 may be located in the MHPA upon granting of an easement to the City (or other acceptable agency) except where narrow wildlife corridors require it to be located outside of the MHPA.

This measure would not apply to the Pure Water Program, as no new residential development is proposed. Except for the proposed AWPFs, proposed features are pipelines and unoccupied concrete structures such as pump stations and reservoir outfall/discharge structures. Brush management may be required on City MHPA land within 100 feet of such structures. Brush management Zone 1 would encroach into the MHPA where such structures are located less than 35 feet from MHPA lands; however brush management Zone 1 is not permitted in the MHPA. Where brush management Zone 1 is not feasible, brush management requirements can be modified by using fire resistive materials in the proposed structure. It is likely that an unoccupied concrete structure would qualify for exemption from brush management Zone 1 requirements, although that decision would rest with the Fire Marshal. Brush management Zone 2 extends from 35 to 100 feet beyond a structure, and is an allowed activity in the MHPA. Where Zone 1 is achievable and required, Zone 2 encroachment into the MHPA would not conflict with the MSCP.

AWPFs are proposed at sites that are large enough to allow brush management Zone 1 within the development area. Brush management Zone 2 might encroach into MHPA lands at these AWPF locations; however, brush management Zone 2 is an allowed activity in the MHPA. Brush management is neither required nor allowed in wetlands; therefore, at sites located within 100 feet of wetland habitat, brush management requirements would not conflict with the MSCP.

Brush management Zone 2 is considered impact-neutral and therefore would not constitute an impact to habitat outside the MHPA.

Grading/Land Development

Manufactured slopes associated with project development must be included in the project footprint.



This measure would potentially apply during construction of above-ground facilities in currently undeveloped areas.

5.7 INVASIVE SPECIES

The proposed Pure Water Program was analyzed for potential impacts through introduction of invasive species into natural or open space areas based on the presence of designated open space or other undeveloped areas of native vegetation adjacent to the proposed feature. Designated open space includes City, County, and Chula Vista preserved areas, as well as USFWS and CDFW lands. Natural areas were identified using MSCP vegetation mapping and recent aerial imagery.

5.7.1 <u>Potential Invasive Species Introduction Impacts</u>

5.7.1.1 North City Area

The following proposed facilities in the North City component are located in developed areas and not adjacent to natural or open space areas.

- North City Water Reclamation Plant Upgrades The site is currently developed. Adjacent lands are developed, disturbed, and non-native grassland.
- Proposed pump station at Mission Bay Drive The site and all adjacent lands are currently developed.

Construction of these facilities would have no potential to introduce invasive species into natural or open space areas.

The following proposed facilities in the North City component are located mostly in developed areas. The portion(s) of each adjacent to natural or open space area is described.

- WF-NC The southernmost 265 feet of the proposed WF-NC is adjacent to native habitat in open space in the San Diego River.
- Proposed pump station at Sherman Street The proposed site for the pump station is on the opposite side of Friars Road from native habitat in the San Diego River. There is very low potential for construction of this feature to introduce invasive species into natural or open space areas in the San Diego River.
- Proposed pump station at Mission Montana Drive The proposed site for the pump station is surrounded by developed land. Diegan coastal sage scrub vegetation in Rancho Mission Canyon is within the 300-foot study area for the proposed pump station, but separated from it by existing residential development and a street.

Construction of these facilities would have very low potential to introduce invasive species into natural or open space areas.



The following proposed facilities in the North City component are located partly within or adjacent to natural or open space areas. The potential areas where the proposed facilities might result in introduction of invasive species into natural or open space areas are described.

- AWPF-NC The proposed AWPF-NC is located in undeveloped lands at the northwestern edge of Kearny Mesa, adjacent to open space in Soledad Canyon. Lands immediately surrounding the proposed AWPF-NC site are disturbed and non-native grassland. Lands in Soledad Canyon include non-native grassland and non-native vegetation, along with native vegetation. All lands surrounding Soledad Canyon are developed. The AWPF-NC is not adjacent to native or open space areas that support sensitive native habitat, and the potential for this facility to result in impacts to native or open space areas through introduction of invasive species is low, as surrounding open space areas already include non-native species.
- WFBP The proposed WFBP is located in open space areas from its northern end at Eastgate Mall to just west of I-805 along Governor Drive. From there, the proposed WFBP is adjacent to natural areas in San Clemente Canyon (Marian Bear Memorial Park), and Tecolote Canyon. The WFBP alignment in these latter places is in existing high-traffic streets adjacent natural areas are already subject to disturbance from road traffic and nearby development. The potential for the proposed WFBP to result in impacts to natural or open space areas in these locations by increasing the likelihood of invasive species introduction over existing levels is low, as there would be no ground disturbance in natural areas. The potential for the WFBP to result in impacts to natural or open space areas through introduction of invasive species in areas east of I-805 is high, as the alignment is in currently undeveloped land that is not subject to existing invasive species pressures from roads and surrounding development.
- PWP-NC The conceptual alignment of the PWP-NC is located in open space areas from its western end to where it crosses SR 52. These areas are a mix of non-native grassland, disturbed, and chamise chaparral. The conceptual alignment of the PWP-NC is located in open space areas in Tierrasanta, the San Diego River west of Mission Gorge, Mission Trails Regional Park, central and eastern Santee, the San Diego River at SR 67 in Lakeside, and at San Vicente Creek. These areas are a mix of native upland and riparian habitats; however, the proposed PWP-NC would likely be in existing streets for most its length and the potential for the PWP-NC to result in impacts to natural or open space areas through introduction of invasive species in these areas is low as long as the proposed pipeline is located in existing streets and thus results in no ground disturbance in natural areas. Between the proposed pump station at Moreno Avenue and the proposed ROD-NC, the PWP-NC to cause impact to natural or open space areas through introduction of invasive species in this area is high, due to the potential for ground disturbance in natural habitat.

5.7.1.2 Central Area

The following proposed facilities in the Central Area component are located in developed areas and not adjacent to natural or open space areas.

- WR/AWPF-CC-HD The site and all adjacent lands are currently developed.
- Pump station at Lake Murray Drive The site and all adjacent lands are currently developed.

Construction of these facilities would have no potential to introduce invasive species into natural or open space areas.

The following proposed facilities in the Central Area component are located mostly in developed areas. The portion(s) of each adjacent to natural or open space area is described.

- SP The conceptual alignment of the SP is located in undeveloped lands at its southern end in Naval Base Point Loma. Lands in this area are a mix of developed, Diegan coastal sage scrub, and southern maritime chaparral. The conceptual alignment of the SP generally follows existing streets and the potential for impact to native or open space areas through introduction of invasive species is low, as the proposed alignment is in areas disturbed by existing roads. Use of jack-and-bore or directional drilling construction methods, or use of existing subterranean pipe in the portion of the alignment northeast of Gatchall Road could reduce the potential for impact to native or open space areas through introduction of invasive species to low, by avoiding surface disturbance in areas of sensitive native habitat.
- P-CC The conceptual alignment of the P-CC is located in open space areas in the San Diego River at Morena Boulevard and at its western end between Fenton Parkway and Camino del Rio North. The conceptual alignment of the P-CC crosses the San Diego River on the existing Morena Boulevard bridge and would not result in impacts to open space areas in that location. The potential for the proposed P-CC between Fenton Parkway and Camino del Rio North to result in impacts to open space areas through the introduction of invasive species is high, as the area currently supports sensitive riparian habitat.
- PWP-CC The conceptual alignment of the PWP-CC is located adjacent to open space in the San Diego River at the proposed pump station/AWPF-CC-MV site, in open space in Navajo Canyon and below the Lake Murray Dam, in Fletcher Hills, and in the San Diego River at SR 67 in Lakeside. The proposed PWP-CC would likely be in existing streets at the pump station/AWPF-CC-MV site and Fletcher Hills, and would not result in impacts to open space at those locations. The PWP-CC crosses undeveloped land in Navajo Canyon, below the Lake Murray Dam, and in the San Diego River at SR 67. The potential for the proposed PWP-CC to result in impacts to open space areas through the introduction of invasive species at these locations is high, as these areas currently support sensitive native habitat.



The following proposed facilities in the Central Area component are located partly within or adjacent to natural or open space areas. The potential areas where the proposed facilities might result in introduction of invasive species into natural or open space areas are described.

• Pump station or AWPF-CC-MV – The proposed pump station/AWPF-CC-MV site is located in undeveloped land adjacent to the San Diego River. Lands in the proposed site are non-native grassland, and adjacent open space is southern riparian woodland. The potential for the proposed pump station/AWPF-CC-MV to result in significant impact to open space areas through the introduction of invasive species at this location is low for areas of non-native grassland and high for areas of southern riparian woodland, given the existing levels of non-native species presence in those two habitats, respectively.

5.7.1.3 South Bay Area

The following proposed facilities in the South Bay component are located mostly in developed areas. The portion(s) of each adjacent to natural or open space area is described.

- AWPF-SB The proposed AWPF-SB site is currently developed or disturbed land, and is adjacent to open space only at the northwest corner. Adjacent open space land is baccharis-dominated Diegan coastal sage scrub. The potential for the proposed AWPF-SB to result in impact to open space areas through the introduction of invasive species at this location is low, as no direct impacts are proposed to open space areas and the site is already developed as the South Bay Water Reclamation Plant.
- Pump station at Sea Vale Street The proposed pump station at Sea Vale Street is located in undeveloped land adjacent to open space in Paradise Creek. The proposed pump station site is currently a disturbed vacant lot, and borders Paradise Creek on its northern edge. Undeveloped land in Paradise Creek is saltbush scrub and southern coastal salt marsh. The potential for the proposed pump station to cause impact to open space areas through the introduction of invasive species at this location is low, as no direct impacts are proposed to open space areas and the site is currently in a disturbed condition.
- WF-SB The conceptual alignment of the WF-SB is located in open space or natural areas in the Sweetwater River, Paradise Creek, Otay River, and the Tijuana River Valley. The conceptual alignment of the WF-SB crosses Paradise Creek in undeveloped land that support southern coastal salt marsh and saltbush scrub. The conceptual alignment of the WF-SB crosses the Otay River in undeveloped lands that are currently disturbed except for freshwater marsh and mule fat scrub in the Otay River itself. The conceptual alignment of the WF-SB crosses the Tijuana River between Saturn Boulevard and Sunset Avenue in open space lands that support southern riparian woodland and Diegan coastal sage scrub. The potential for the proposed WF-SB to result in impact to open space areas through the introduction of invasive species at these locations is high, as the proposed alignment passes through existing sensitive native habitats. The proposed WF-SB in the remaining areas where it is in or adjacent to open space would likely be in existing streets and construction of the WF-SB would not result in impact to adjacent open space in these areas.



The following proposed facilities in the South Bay component are located partly within or adjacent to natural or open space areas. The potential areas where the proposed facilities might result in introduction of invasive species into natural or open space areas are described.

- ROD-SB The proposed ROD-SB is located entirely within open space or natural areas that support Diegan coastal sage scrub, freshwater marsh, and eucalyptus woodland.
- Pump station at Otay Lakes County Park The proposed pump station location at Otay Lakes County Park is partly developed, and partly a mix of Diegan coastal sage scrub, non-native grassland, and eucalyptus woodland.
- PWP-SB The conceptual alignment of the PWP-SB is located almost entirely within open space or natural areas for the eastern two-thirds of its length in Mesa, Otay Valley, and the western shore of Otay Reservoir, and also at its eastern end in the Tijuana River Valley. The conceptual alignment follows existing streets and unpaved access roads for most of its length, with short crossings in undeveloped land at the Tijuana River and the east end of Otay Valley. The majority of open space lands in these areas are non-native upland and non-native riparian vegetation types.

Given the existing levels of disturbance by non-native species in most of the open space areas in and adjacent to these proposed facilities, the potential for these facilities to result in impacts to natural or open space areas through introduction of invasive species is low in places where non-native species are already common, and moderate where current levels of non-native species presence are lower.

5.7.2 Invasive Species Introduction Avoidance Recommendations

For all facilities in all components, siting ground disturbance in existing developed, disturbed, and non-native areas will minimize new disturbance to natural areas. Where proposed facilities cross open space in rivers, using jack-and-bore or directional drilling construction methods could avoid surface disturbance to riparian areas. Revegetating temporary disturbance areas with native species palettes and maintaining revegetation areas for at least 25 months would reduce the likelihood of the Pure Water Program having an impact on adjacent natural or open space areas through introduction of invasive species.

6.0 REQUIRED PRESERVE BOUNDARY ADJUSTMENTS

6.1 MHPA BOUNDARY LINE ADJUSTMENTS

Proposed pipelines are compatible uses in the City MHPA and could be located mostly in existing streets within the MHPA. Section 1.4.2 of the MSCP Subarea Plan states that proposed utility lines that cannot be located outside of the MHPA should follow previously existing roads, easements, rights-of-way, and disturbed areas. Some proposed pipelines could be located within the MHPA (and not in existing streets). Impacts from construction of these pipelines could be avoided by using jack-and-bore or directional drilling construction methods, and unavoidable



surface impacts would be temporary. No City MHPA Boundary Line Adjustments are expected to be required to construct these proposed pipelines.

All development for utilities within the MHPA must be designed to minimize environmental impacts and must avoid disturbing the habitat of MSCP-covered species, and wetlands. If such avoidance is unfeasible, impacts must be mitigated. Temporary access roads and staging areas in the MHPA must be located in agricultural lands or existing disturbed areas rather than in habitat. If temporary disturbance to habitat in the MHPA is unavoidable, restoration of and/or mitigation for the disturbed area will be required after project completion. Construction and maintenance activities in wildlife corridors in the MHPA must avoid significant disruption of corridor usage.

Permanent surface structures are proposed in the City MHPA at the following locations: the pump station at Moreno Avenue; the ROD-NC; the pump station at Otay Lakes County Park; and the ROD-SB. The proposed pump stations at Moreno Avenue and Otay Lakes County Park would be located in currently developed and disturbed areas and would not have an adverse effect on the MHPA. The proposed ROD-NC and ROD-SB would be located in currently undeveloped land. Minor water facilities and public infrastructure facilities are compatible uses in the MHPA and these proposed Pure Water Program facilities likely would qualify as compatible uses in the MHPA; however, should the City or the resource agencies decide that the proposed Reservoir Outfall/Discharge Structures are not compatible uses in the MHPA, Boundary Line Adjustments would be required at those two locations.

If a proposed project is not considered a compatible use within the MHPA and would encroach into the MHPA beyond the allowable development area pursuant to Sections 143.0142 and 131.0250(b) of the Land Development Code and pages 13-15 of the City's Biology Guidelines, an MHPA boundary line adjustment would be required. Under the City's MSCP Subarea Plan, an adjustment to the City's MHPA boundary is allowed only if the new MHPA boundary results in an exchange of lands that are functionally equivalent or higher in biological value. A determination of functionally equivalent or higher biological value will be based on site-specific information (both quantitative and qualitative) that addresses the six boundary adjustment criteria outlined in Section 5.4.3 of the Final MSCP Plan (August 1998), which are as follows:

- 1. Effects on significantly and sufficiently conserved habitats (i.e., the exchange maintains or improves the conservation, configuration, or status of significantly and sufficiently conserved habitats, as defined in Section 3.4.2 [of the MSCP Plan];
- 2. Effects on covered species (i.e., the exchange maintains or increases the conservation of covered species);
- 3. Effects on habitat linkages and function of preserve areas (i.e., the exchange maintains or improves any habitat linkages or wildlife corridors);
- 4. Effects on preserve configuration and management (i.e., the exchange results in similar or improved management efficiency and/or protection of biological resources);

- 5. Effects on ecotones or other conditions affecting species diversity (i.e., the exchange maintains topographic and structural diversity and habitat interfaces of the preserve);
- 6. Effects on species of concern not on the covered species list (i.e., the exchange does not significantly increase the likelihood that an uncovered species will meet the criteria for listing under either the federal or state ESAs).

All proposed MHPA boundary adjustments require approval from the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife. Approval is required prior to release of the environmental documentation for the project. Early consultation with the wildlife agencies would be required for any proposed MHPA boundary adjustment. Any proposed boundary adjustment will also be disclosed in the environmental document (i.e., CEQA) for the project.

6.2 COUNTY PRESERVE ADJUSTMENTS

Construction of the proposed PWP-NC in County Hardline Preserve lands between San Vicente Creek and the proposed ROD-NC would not require an amendment to the County MSCP Subarea Plan to allow temporary impacts. If the Hardline Preserve lands are under a conservation easement or other restrictive covenant that does not allow temporary impacts, it would be necessary to modify the easement restrictions.

No other modifications to County Preserve lands would be required for the Pure Water Program.

6.3 CHULA VISTA PRESERVE BOUNDARY ADJUSTMENTS

No adjustments to City of Chula Vista 100-percent Conserved Area boundaries would be required for the Pure Water Program. Proposed facilities in Chula Vista preserve areas are compatible with the Chula Vista MSCP Subarea Plan and Otay Ranch Resource Management Plan.

6.4 PLECA BOUNDARY ADJUSTMENTS

The PLECA MOU is a non-regulatory, voluntary agreement among its signatory parties. The PLECA MOU considers construction of linear utilities within the PLECA as new construction and recommends that it be located in existing roads and utility corridors if possible. The PLECA Working Group will determine on a case-by-case basis if PLECA lands affected by construction should be removed from the PLECA. If lands are removed from the PLECA, an area of equal size and equal or greater ecological value will be added to the PLECA to offset the loss. Additional mitigation for impacts to habitat removed from the PLECA may be required; such mitigation may consist of adding land to the PLECA or restoring habitat within or outside of the PLECA. Such mitigation will be proposed in the associated NEPA/CEQA compliance document and reviewed by the PLECA Working Group. Constructing the proposed SP in existing roads, using existing subterranean pipe, or siting new pipeline in existing utility corridors would satisfy the terms of the PLECA MOU and avoid a PLECA boundary adjustment. The PLECA Working Group will determine if a PLECA boundary adjustment is required based on the final design and restoration/mitigation proposal(s) from the City.



7.0 REFERENCES

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Appendix A

SENSITIVE SPECIES EVALUATED FOR POTENTIAL TO OCCUR



Appendix A						
SENSITIVE SPECIES EVALUATED FOR POTENTIAL TO OCCUR ¹						
PURE WATER SAN DIEGO PROJECT						
Species Name	Species Name Common Name Status ² Habit, Ecology and Life History					
Plants						
Acanthomintha ilicifolia	San Diego thorn-mint	FT/SE CRPR 1B.1 MSCP Covered Narrow Endemic	Small herb. Occurs on clay soils near vernal pools and in grassy openings in coastal sage scrub and chaparral. Flowering period Apr – Jun.			
Acmispon prostrata	Nuttall's lotus	/ CRPR 1B.1 MSCP Covered	Small herb. Occurs on coastal dunes, especially well- protected back dunes with minimal disturbance. Flowering period Mar – Jun.			
Adolphia californica	California adolphia	/ CRPR 2B.1	Medium shrub. Occurs in sage scrub, especially in xeric sites on hillsides near creeks. Flowering period Dec – May.			
Agave shawii	Shaw's agave	/ CRPR 2.1 MSCP Covered Narrow Endemic	Conspicuous leaf succulent. Occurs in coastal bluff scrub and coastal sage scrub. Flowering period Sep – May.			
Ambrosia chenopodiifolia	San Diego bur-sage	/ CRPR 2B.1	Conspicuous shrub. Ocurrs in xeric, open coastal sage scrub on Otay Mesa. Flowering period Apr – Jun.			
Ambrosia monogyra	single-whorl burrobrush	/ CRPR 2B.2	Conspicuous shrub. Occurs in sage scrub. Flowering period Aug – Nov.			
Ambrosia pumila	San Diego ambrosia	FE/ CRPR 1B.1 MSCP Covered Narrow Endemic	Small herb. Occurs on clay soils. Found in grasslands, valley bottoms and dry drainages, also can occur on slopes, disturbed places, and in coastal sage scrub. Flowering period Apr – Oct.			
Aphanisma blitoides	Aphanisma	/ CRPR 1B.2 MSCP Covered Narrow Endemic	Small herb. Occurs in coastal bluff scrub, coastal dunes, and sandy coastal scrub. Flowering period Mar – Jun.			
Astragalus tener var. titi	Coastal dunes milk-vetch	FE/SE CRPR 1B.1 MSCP Covered Narrow Endemic	Medium herb. Occurs in coastal dunes and sandy places along the coast. Flowering period Mar – May.			

Appendix A (cont.) SENSITIVE SPECIES EVALUATED FOR POTENTIAL TO OCCUR ¹ PURE WATER SAN DIEGO PROJECT				
Species Name	Common Name	Status ²	Habit, Ecology and Life History	
Plants (cont.)				
Atriplex coulteri	Coulter's saltbush	/ CRPR 1B.2	Mat-forming herb. Occurs in coastal bluff scrub, coastal dunes, valley and foothill grassland, and desert slopes. May be extirpated from San Diego County as well as nearing extirpation elsewhere in mainland California. Flowering period Mar – Oct.	
Atriplex pacifica	south coast allscale	/ CRPR 1B.2	Mat-forming herb. Occurs in xeric, slightly disturbed sites in coastal bluff scrub, and on alkaline flats. Flowering period Mar – Oct.	
Baccharis vanessae	Encinitas baccharis	FT/SE CRPR 1B.1 MSCP Covered Narrow Endemic	Large shrub. Occurs in post-fire and mature but relatively low-growing chaparral. Also found in southern maritime and southern mixed chaparrals. Flowering period Aug – Nov.	
Bahiopsis laciniata	San Diego sunflower	/ CRPR 4.2	Large shrub. Occurs in coastal sage scrub and chaparral. Flowering period Feb – Aug.	
Berberis nevinii	Nevin's barberry	FE/SE CRPR 1B.1 MSCP Covered Narrow Endemic	Large shrub. Occurs in sandy and gravelly places in coastal sage scrub and chaparral, and in chaparral with strong desert affinities. Flowering period Mar – Jun.	
Bergerocactus emoryi	golden-spined cereus	/ CRPR 2B.2	Conspicuous stem succulent. Occurs on sandy soils and dry bluffs in maritime succulent scrub. Flowering period May – Jun.	
Bloomeria clevelandii	San Diego goldenstar	/ CRPR 1B.1 MSCP Covered	Small herb. Occurs on clay soils in grasslands and coastal sage scrub. Elevation range 0-2000 ft. Flowering period Apr – May.	

Appendix A (cont.)					
SENSITIVE SPECIES EVALUATED FOR POTENTIAL TO OCCUR ¹					
	PURE WATER SAN DIEGO PROJECT				
Species Name	Common Name	Status ²	Habit, Ecology and Life History		
Plants (cont.)					
Brodiaea filifolia	thread-leaved brodiaea	FT/SE CRPR 1B.1 MSCP Covered Narrow Endemic	Small herb. Occurs in vernal pools in grassland and sage scrub. Flowering period Mar – Jun.		
Brodiaea orcuttii	Orcutt brodiaea	/ CRPR 1B.1 MSCP Covered	Small herb. Occurs only on clay soils in vernally moist environments, usually near vernal pools but occasionally near streams. Elevation range 0-5000 ft. Flowering period May – Jul.		
California macrophylla	round-leaved filaree	/ CRPR 1B.1	Small herb. Occurs on clay soils in open areas of grassland and sage scrub in coastal valleys. Flowering period Mar – May.		
Calochortus dunnii	Dunn's mariposa lily	/SR CRPR 1B.2 MSCP Covered Narrow Endemic	Small herb. Occurs on gabbroic and metavolcanic soils on dry, stony ridges and firebreaks in chaparral or chaparral/grassland ecotone. Flowering period Apr – Jun.		
Ceanothus cyaneus	Lakeside ceanothus	/ CRPR 1B.2 MSCP Covered Narrow Endemic	Large shrub. Occurs in mixed chaparral in the region from Crest to the foothills in Lakeside. Flowering period Apr – Jun.		
Ceanothus verrucosus	wart-stemmed ceanothus	/ CRPR 2B.2 MSCP Covered	Large shrub. Occurs in chaparral. Elevation range 0-2000 ft. Flowering period Jan – Apr.		
Chaenactis glabriuscula	Orcutt's pincushion	/	Small herb. Occurs open coastal sage scrub, typically in		
var. orcuttiana	1, 1, 1, 1, 1, 1, 1	CRPR 1B.1	proximity to moist ocean air. Flowering period Jan – Aug.		
Chloropyron maritimum	salt marsh bird's beak	FE/SE CDDD 1D 1	Small nerb. Occurs on slightly raised hummocks in salt		
ssp. <i>maritimum</i>		MSCP Covered	marsh. Flowering period May – Oct.		
Chorzanthe orcuttiana	Orcutt's spineflower	FE/SE CRPR 1B.1	Small herb. Occurs on loose, sandy soils in coastal chamise chaparral. Flowering period Mar – May.		

Appendix A (cont.)						
SENSITIVE SPECIES EVALUATED FOR POTENTIAL TO OCCUR ¹						
PURE WATER SAN DIEGO PROJECT						
Species Name	Species Name Common Name Status ² Habit, Ecology and Life History					
Plants (cont.)			/ 8, , , , , , , , , , , , , , , , , , ,			
Chorizanthe polygonoides	long-spined spineflower	/	Small herb. Occurs on clay soils in chaparral, grassland,			
var. <i>longispina</i>		CRPR 1B.2	and sage scrub, and occasionally near vernal pools and			
			montane meadows. Flowering period Apr – Jul.			
Clarkia delicata	delicate clarkia	/	Small herb. Occurs in shaded areas on the periphery of oak			
		CRPR 1B.2	woodland and chaparral. Flowering period Apr – Jun.			
Comarostaphylis	summer holly	/	Large shrub. Occurs in coastal chaparral. Elevation range			
<i>diversifolia</i> ssp.		CRPR 1B.2	100-2700 ft. Flowering period Apr – Jun.			
diversifolia						
Corethrogyne filaginifolia	San Diego sand aster	/	Small perennial herb. Occurs in sandy openings between			
var. <i>incana</i>		CRPR 1B.1	chamise shrubs in coastal chaparral. Flowering period Jun –			
		MSCP Covered	Sep.			
Cylindropuntia californica	Snake cholla	/	Conspicuous stem succulent. Occurs in chaparral and			
var. californica		CRPR 1B.1	Diegan coastal sage scrub. Flowering period Apr – Jul.			
		MSCP Covered				
		Narrow Endemic				
Deinandra conjugens	Otay tarplant	FT/SE	Small herb. Occurs in coastal sage scrub and grassland			
		CRPR 1B.1	habitats south of the Sweetwater River. Flowering period			
		MSCP Covered	May – Jun.			
		Narrow Endemic				
Dicranostegia orcuttiana	Orcutt's bird's beak	/	Small herb. Occurs on cobbly soils in seasonal drainages			
		CRPR 2B.1	with sage scrub upslope and baccharis scrub or willow scrub			
		MSCP Covered	near the watercourse. Flowering period Apr – Jul.			
Dudleya variegata	Variegated dudleya	/	Small leaf succulent. Occurs on clay soils near vernal pools,			
		CRPR 1B.2	and on metavolcanic rocky soils in open coastal sage scrub,			
		MSCP Covered	chaparral, and grasslands. Elevation range 0-3500 ft.			
		Narrow Endemic	Flowering period Apr – Jun.			

Appendix A (cont.)			
SENSITIVE SPECIES EVALUATED FOR POTENTIAL TO OCCUR ¹			
	PURE W	VATER SAN DIEG	O PROJECT
Species Name	Common Name	Status ²	Habit, Ecology and Life History
Plants (cont.)			
Ericameria palmeri	Palmer's ericameria	/ CRPR 1B.1 MSCP Covered Narrow Endemic	Large shrub. Occurs in coastal drainages, mesic chaparral, and occasionally in coastal sage scrub. Elevation range 0- 1500 ft. Flowering period Sep – Nov.
Eryngium aristulatum var. parishii	San Diego button-celery	FE/SE CRPR 1B.1 MSCP Covered	Medium herb. Vernal pools or mima mound areas with vernally moist conditions are preferred habitat. Suitable habitat does not occur on site. Flowering period Apr – Jun.
Euphorbia misera	cliff spurge	/ CRPR 2B.2	Small shrub. Occurs on coastal bluffs in sage scrub and coastal bluff scrub. Flowering period Dec – Aug.
Ferocactus viridescens	San Diego barrel cactus	/ CRPR 2B.1 MSCP Covered	Conspicuous stem succulent. Occurs in coastal sage scrub, chaparral, and valley grasslands. Elevation range 0-1300 ft. Flowering period May – Jun.
Frankenia palmeri	Palmer's frankenia	/ CRPR 2B.1	Small shrub. Occurs on the periphery of coastal salt marsh. Flowering period May – Jul.
Harpagonella palmeri	Palmer's grapplinghook	/ CRPR 4.2	Small herb. Occurs on clay soils in grasslands and coastal sage scrub. Flowering period Mar – May.
Heterotheca sessiliflora ssp. sessiliflora	beach goldenaster	/ CRPR 1B.1	Mat-forming herb that occurs in a variety of habitats. Elevation range 0-5000 ft. Flowering period Mar – Dec.
Hesperocyparis forbesii	Tecate cypress	/ CRPR 1B.1 MSCP Covered	Medium tree. Occurs in closed-cone coniferous forest and montane chaparral. No flowering period, as it is not a flowering plant.
Isocoma menziesii var. decumbens	decumbent goldenbush	/ CRPR 1B.2	Conspicuous shrub. Occurs in disturbed areas of coastal sage scrub and riparian areas. Elevation range 0-1500 ft. Flowering period Apr – Nov.
Iva hayesiana	San Diego marsh-elder	/ CRPR 2B.2	Medium shrub. Occurs on alkaline soils on the banks of intermittent streams. Flowering period Apr – Oct.
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	/ CRPR 1B.1	Small herb. Occurs in vernal pools and coastal salt marsh. Flowering period Feb – Jun.

Appendix A (cont.)				
SENSITIVE SPECIES EVALUATED FOR POTENTIAL TO OCCUR ¹				
PURE WATER SAN DIEGO PROJECT				
Species Name	Common Name	Status ²	Habit, Ecology and Life History	
Plants (cont.)				
Lepidium virginicum var. robinsonii	Robinson's peppergrass	/ CRPR 4.3	Medium herb. Occurs in openings in chaparral and sage scrub, typically in dry, exposed sites. Flowering period Jan – Jul.	
Leptosyne maritima	sea dahlia	/ CRPR 2B.2	Large herb. Occurs on coastal bluffs. Flowering period Mar – May.	
Lepechinia ganderi	Gander's pitcher sage	/ CRPR 1B.3 MSCP Covered Narrow Endemic	Medium shrub. Occurs on metavolcanic soils in chaparral in the San Miguel, Otay, and Jamul Mountains. Flowering period Jun – Jul.	
Monardella hypoleuca ssp. lanata	felt-leaved monardella	/ CRPR 1B.2 MSCP Covered Narrow Endemic	Small herb. Occurs in xeric sites in chaparral, typically beneath mature stands of chamise. Flowering period Jun – Aug.	
Monardella viminea	willowy monardella	FE/SE CRPR 1B.1 MSCP Covered	Small shrub. Occurs on sandy and cobbly soil in and near dry washes and seasonal creeks. Flowering period Jun – Aug.	
Myosurus minimus ssp. apus	little mousetail	/ CRPR 3.1	Small herb. Occurs in vernal pools. Flowering period Mar – Jun.	
Navarretia fossalis	spreading navarretia	FT/ CRPR 1B.1 MSCP Covered Narrow Endemic	Small herb. Occurs in vernal pools. Elevation range 200- 3000 ft. Flowering period Apr – Jun.	
Navarretia prostrata	prostrate vernal pool navarretia	/ CRPR 1B.1 MSCP Covered Narrow Endemic	Small herb. Occurs in vernal pools. Flowering period Apr – Jul.	
Nemacaulis denudata var. denudata	coast woolly-heads	/ CRPR 1B.2	Small herb. Occurs on well-developed sand dunes and back dunes in protected areas. Flowering period Apr – Sep.	

Appendix A (cont.)				
SENSITIVE SPECIES EVALUATED FOR POTENTIAL TO OCCUR ¹				
	PURE W	ATER SAN DIEG	U PROJECT	
Species Name	Common Name	Status ²	Habit, Ecology and Life History	
Plants (cont.)				
Nemacaulis denudata var. gracilis	slender cottonheads	/ CRPR 2B.2	Small herb. Occurs on well-developed sand dunes in the desert and rarely along coastal beaches. Flowering period Apr – May.	
Nolina interrata	Dehesa beargrass	/SE CRPR 1B.1 MSCP Covered Narrow Endemic	Medium shrub. Occurs on gabbroic and peridotite soils in open chaparral. Flowering period Jun – Jul.	
Ornithostaphylos oppositifolia	Baja California birdbush	/SE CRPR 2B.1	Medium shrub. Occurs in one known location in Border Field State Park west of the project area.	
Pogogyne abramsii	San Diego mesa mint	FE/SE CRPR 1B.1 MSCP Covered Narrow Endemic	Small herb. Occurs within vernal pools. Flowering period Mar – Jul.	
Pogogyne nudiuscula	Otay mesa mint	FE/SE CRPR 1B.1 MSCP Covered Narrow Endemic	Small herb. Occurs within vernal pools. Flowering period May – Jul.	
Quercus dumosa	Nuttall's scrub oak	/ CRPR 1B.1	Small tree. Occurs in chaparral and coastal sage scrub near the coast. Elevation range 50-6800 ft. Flowering period Feb – Mar.	
Salvia munzii	Munz's sage	/ CRPR 2B.2	Large shrub. Occurs in chaparral on hills south of the Tijuana River Valley. Flowering period Jan – Apr.	
Selaginella cinerascens	ashy spike moss	/ CRPR 4.1	Small herb. Occurs on undisturbed soils on flat mesas in coastal sage scrub and chaparral. No flowering period, as it is not a flowering plant.	
Senecio aphanactis	chaparral ragwort	/ CRPR 2B.2	Small herb. Occurs in coastal sage scrub and foothill woodland. Elevation range 50-3900 ft. Flowering period Jan – Apr.	

Appendix A (cont.)					
SENSITIVE SPECIES EVALUATED FOR POTENTIAL TO OCCUR ¹					
	PURE WATER SAN DIEGO PROJECT				
		2			
Species Name	Common Name	Status ²	Habit, Ecology and Life History		
Plants (cont.)					
Stemodia durantifolia	purple stemodia	/	Small herb. Occurs in wet sand along small creeks and		
		CRPR 2B.1	seasonal streams. Elevation range 165-5800 ft. Flowering		
			period Jan – Dec.		
Streptanthus bernardinus	Laguna Mountains	/	Medium herb. Occurs in chaparral and yellow pine forest.		
	jewelflower	CRPR 4.3	Flowering period May – Aug.		
Stylocline citroleum	oil neststraw	/	Small herb. Occurs in clay soils in coastal sage scrub and		
		CRPR 1B.1	chenopod scrub. Flowering period Mar – Apr.		
Suaeda esteroa	estuary seablite	/	Medium shrub. Occurs on the periphery of coastal salt		
		CRPR 1B.2	marsh. Flowering period May – Oct.		
Tetracoccus dioicus	Parry's tetracoccus	/	Small shrub. Occurs on gabbroic soils in low-growing		
		CRPR 1B.2	chamise chaparral and sage scrub, typically in xeric sites.		
		MSCP Covered	Flowering period Apr – May.		
Animals					
Invertebrates					
Branchinecta	San Diego fairy shrimp	FE/	Restricted to vernal pools and seasonal ponds that hold		
sandiegonensis		MSCP Covered	water for several weeks during and after the rainy season.		
		Narrow Endemic			
Streptocephalus woottoni	Riverside fairy shrimp	FE/	Restricted to vernal pools and seasonal ponds that hold		
		MSCP Covered	water for several weeks during and after the rainy season.		
		Narrow Endemic			
Callophrys thornei	Thorne's hairstreak	/	Restricted to Otay Mountain, where its larval host plant		
		County Group 1	Tecate cypress occurs.		
		MSCP Covered			

Appendix A (cont.)				
SENSITIVE SPECIES EVALUATED FOR POTENTIAL TO OCCUR ¹				
	I UKL W	ATER SAN DIEG	O I ROJECI	
Species Name	Common Name	Status ²	Habit, Ecology and Life History	
Animals (cont.)				
Invertebrates (cont.)				
Cicindela gabbii	western tidal-flat tiger	/	Found on mudflats and dry saline flats of estuaries.	
	beetle	County Sensitive		
Cicindela latesignata	western beach tiger beetle	/	Found on mudflats and beaches.	
latesignata		County Sensitive		
Danaus plexippus	monarch butterfly	/	Roosts along the coast in winter, in protected groves of	
		County Sensitive	trees with water and nectar sources nearby. Larvae are	
			restricted to milkweeds (Asclepias spp.).	
Euphydryas editha quino	Quino checkerspot	FE/	Found in areas of open, sparse vegetation where the larval	
	butterfly	County Group 1	host plant dwarf plantain (Plantago erecta) occurs.	
		Narrow Endemic		
Amphibians and Reptiles	1	1		
Aspidoscelis hyperthyra	orange-throated whiptail	/ SSC	Common in sage scrub and grassland areas in San Diego.	
beldingi		MSCP Covered		
Aspidoscelis tigris	coastal whiptail	/	Found in open coastal sage scrub, chaparral, and	
stejnegeri		County Group 2	woodlands, with open sunny areas, shrub cover, and	
			accumulated leaf litter.	
Chelonia mydas	green turtle	FT/	Known to inhabit eelgrass beds near the warm water	
			effluent channel of the South Bay Power Station in Chula	
			Vista beginning in 1960. The South Bay Power Station no	
			longer exists.	
Crotalus ruber	red diamond rattlesnake	/SSC	Found along creek banks in chaparral and coastal sage	
			scrub, especially among rock outcrops and piles of debris.	
Lycanura trivirgata	rosy boa	/	Found in rocky outcrops in coastal sage scrub, chaparral,	
		County Group 2	and desert scrub.	

Appendix A (cont.) SENSITIVE SPECIES EVALUATED FOR POTENTIAL TO OCCUR ¹ PURE WATER SAN DIEGO PROJECT				
Species Name	Common Name	Status ²	Habit, Ecology and Life History	
Animals (cont.)				
Amphibians and Reptiles	(cont.)			
Phrynosoma blainvillei	coast horned lizard	/SSC MSCP Covered	Found in coastal sage scrub and open areas in chaparral, oak woodlands, and coniferous forests with basking sites and areas of loose soil. Require native ants as prey and typically are not found in areas invaded by argentine ants (<i>Linepithema humile</i>).	
Plestiodon skiltonianus interparietalis	Coronado Island skink	/SSC	Found in grassland, coastal sage scrub, chaparral, oak woodland, and coniferous forests, usually under rocks, leaf litter, debris, or logs.	
Thamnophis hammondii	two-striped garter snake	/SSC	Found along permanent and intermittent streams bordered by dense riparian vegetation; occasionally associated with vernal pools and stock ponds.	
Birds		·		
Accipiter cooperi	Cooper's hawk	/WL MSCP Covered	Found in oak groves, mature riparian woodlands, and eucalyptus groves.	
Aimophila ruficeps	southern California	/WL	Found in coastal sage scrub, open chaparral, and shrubby	
canescens	rufous-crowned sparrow	MSCP Covered	grasslands.	
Athene cunicularia	burrowing owl	BCC/SCC MSCP Covered Narrow Endemic	Found in open areas including grassland, sparse scrub, disturbed sites, and agricultural fields. Utilizes burrows dug by large rodents such as California ground squirrel (<i>Spermophilus beecheyi</i>).	
Campylorhynchus bruneicapillus	coastal cactus wren	BC/SSC MSCP Covered Narrow Endemic	Found in cactus thickets in coastal lowlands.	
Charadrius alexandrinus nivosus	western snowy plover	FT/ MSCP Covered	Found on beaches, dunes, and salt flats.	

Appendix A (cont.)				
SENSITIVE SPECIES EVALUATED FOR POTENTIAL TO OCCUR ¹				
PURE WATER SAN DIEGO PROJECT				
Spacios Nama	Common Nama	Status ²	Habit Ecology and Life History	
A nimels (cont.)	Common Name	Status	Habit, Ecology and Life History	
Birds (cont.)				
<u>Circus cyaneus</u>	northern harrier	/SSC	Found in open grassland and marsh primarily in coastal	
Circus Cyuneus		MSCP Covered	lowlands but occasionally in foothills mountains and	
		MBCI Covered	deserts.	
Coccyzus americanus	western yellow-billed	FT/SE	Nests in extensive stands of mature riparian woodland.	
occidentalis	cuckoo			
Dendroica petechia	yellow warbler	/SSC	Found in riparian woodland.	
Falco mexicanus	prairie falcon	/	Nests on cliff or bluff ledges or occasionally in old hawk	
	-		or raven nests; forages in grassland or desert habitats.	
Falco peregrinus anatum	American peregrine falcon	/	Found in areas with cliffs near water where prey	
		Delisted	(shorebirds and ducks) is concentrated. Preferred hunting	
		MSCP Covered	areas are agricultural fields, meadows, marshes, and lakes.	
			Usually nests on cliff ledges or in a scrape in debris,	
			occasionally in the old nests of other birds.	
Icteria virens	yellow-breasted chat	/SSC	Found in mature riparian woodland.	
Laterallus jamaicensis	California black rail	/ST	Found in wetland habitats; presumed extirpated from San	
coturniculus			Diego County.	
Passerculus sandwichensis	Belding's savannah	/SE	Found in coastal salt marshes dominated by pickleweed	
beldingi	sparrow	MSCP Covered	(Salicornia spp.).	
Polioptila californica	coastal California	FT/	Found in coastal sage scrub.	
californica	gnatcatcher	MSCP Covered		
Rallus obsoletus	light-footed Ridgway's	FE/SE	Found in coastal salt marshes, especially those dominated	
(=longirostris) brevipes	(formerly clapper) rail	MSCP Covered	by cordgrass (Spartina spp.); occasionally uses brackish	
			and freshwater sites.	
Sternulla antillarum	California least tern	FE/SE	Nests on beaches and coastal dunes.	
browni		MSCP Covered		
Vireo bellii pusillus	least Bell's vireo	FE/SE	Found in riparian thickets, usually willow and	
		MSCP Covered	cottonwood.	

Appendix A (cont.) SENSITIVE SPECIES EVALUATED FOR POTENTIAL TO OCCUR ¹					
	PURE WATER SAN DIEGO PROJECT				
Species Name	Common Name	Status ²	Habit, Ecology and Life History		
Animals (cont.)					
<u>Mammals</u> (cont.)					
Antrozous pallidus	pallid bat	/SSC	Found in deserts and canyons; roosts in buildings, crevices, and occasionally caves, mines, and hollow trees.		
Chaetodippus fallax fallax	northwestern San Diego pocket mouse	/SSC	Found on sandy soils in open coastal sage scrub and weedy vegetation.		
Choeronycteris mexicana	Mexican long-tongued bat	/SSC	Found in arid scrub, mixed forest, and canyons in mountain ranges rising from the desert; roosts in caves and mines.		
Eumops perotis californicus	western mastiff bat	/SSC	Found in chaparral and where coast live oaks are found, also in arid, rocky areas, cliffs, and canyons.		
Lasiurus blossevillii	western red bat	/SSC	Found adjacent to streams and open fields, in orchards and occasionally in urban areas.		
Lasiurus xanthinus	western yellow bat	/	Found in wooded areas and desert scrub. Roosts in foliage, particularly in thorny vegetation, palms, and other desert riparian habitats.		
Lepus californicus bennettii	San Diego black-tailed jackrabbit	/SSC	Found in open habitats including coastal sage scrub, chaparral, grassland, cropland, and disturbed areas, wherever sufficient shrub cover is present.		
Myotis yumanensis	Yuma myotis	/	Found near ponds, streams, or lakes. By day, under sidings or shingles, caves, mines, buildings, or under bridges.		
Neotoma lepida intermedia	San Diego desert woodrat	/SSC	Found in open chaparral and coastal sage scrub; builds large stick nests in rock outcrops or around the base of cactus and yucca.		
Nyctinomops femorosaccus	pocketed free-tailed bat	/SSC	Found in Pinyon-Juniper woodlands and desert scrub.		
Nyctinomops macrotus	big free-tailed bat	/SSC	Found in rocky areas; roosts in rocky cliffs, sometimes caves, buildings, or tree holes.		

Appendix A (cont.) SENSITIVE SPECIES EVALUATED FOR POTENTIAL TO OCCUR¹ PURE WATER SAN DIEGO PROJECT

Spacios Nama	Common Nama	Status ²	Habit Foology and Life History
Species Name	Common Name	Status	Habit, Ecology and Life History
Animals (cont.)			
Mammals (cont.)			
Odocoileus hemionus	mule deer	/	Found in coastal sage scrub, chaparral, grassland, riparian
fuliginata		County Sensitive	and montane forest, cropland, and open areas with some
		MSCP Covered	scrub cover.
Taxidea taxus	American badger	/SSC	Found in open plains and prairies, farmland, and
		MSCP Covered	occasionally edges of woods.

¹Sensitive species reported within 0.5 miles of the project, except Narrow Endemics which are County-wide.

²Listing is as follows: F = Federal; S = State of California; E = Endangered; T = Threatened; R = Rare; WL=Wait Listed; SSC = State Species of Special Concern.

CRPR = California Rare Plant Rank: 1A – presumed extinct; 1B – rare, threatened, or endangered in California and elsewhere; 2A – presumed extirpated in California but more common elsewhere; 2B – rare, threatened, or endangered in California but more common elsewhere; 3 – more information needed; 4 – watch list for species of limited distribution. Extension codes: .1 – seriously endangered; .2 – moderately endangered; .3 – not very endangered.

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Appendix B

CONDITIONS OF COVERAGE FOR MSCP-COVERED SPECIES



Appendix B CONDITIONS OF COVERAGE FOR MSCP-COVERED SPECIES PURE WATER SAN DIEGO PROJECT

Species Name	Common Name	Conditions of Coverage
Plants	1	· ~ ~
Acanthomintha	San Diego	Area specific management directives and the SPA for the
ilicifolia	thorn-mint	Otay Lakes Resort area must include specific measures to
		protect against detrimental edge effects from the
		surrounding development.
Acmispon prostrata	Nuttall's lotus	Area specific management directives must include
		specific measures to protect against detrimental edge
		effects.
Agave shawii	Shaw's agave	Area specific management directives must include
		specific measures to protect against detrimental edge
<u> </u>		effects.
Ambrosia pumila	San Diego ambrosia	If more than 10 percent of the populations at the Mission
		I rails Regional Park is impacted, this species will no
		longer be a covered species. Area specific management
		populations, and specific measures to protect against
		detrimental edge effects
Anhanisma hlitoides	anhanisma	None
Astragalus tener var	coastal dunes milk-	Area specific management directives must provide for
titi	vetch	reintroduction opportunities identify potential
		reintroduction sites, and include measures to prevent
		non-native species introductions. Any newly found
		population shall be evaluated for inclusion in the
		preserve strategy through acquisition, like exchange, etc.
Baccharis vanessae	Encinitas baccharis	Based on BMPs, area specific management directives
		must include specific management measures to address
		the autecology and natural history of the species and to
		reduce the risk of catastrophic fire; and appropriate
		male/female plant ratios. Management measures to
		accomplish this may include prescribed fire.
Berberis nevinii	Nevin's barberry	None.
Bloomeria clevelandii	San Diego	Area specific management directives must include
	goldenstar	monitoring of the transplanted population(s), and specific
		measures to protect against detrimental edge effects to
Due die eer 61:6-1: -	thuss of lasses of	Nege
Broalaea filifolia	brodiaea	None.
Prodigag orguttij	Oroutt brodiogo	The San Vicente population is identified as a critical
Diodided of Culli	Ofcult biouraea	population in the County's Subarea Plan and must be 100
		percent conserved. Area specific management directives
		must include specific measures to protect against
		detrimental edge effects.
Calochortus dunnii	Dunn's mariposa	None.
	lily	
Ceanothus cyaneus	Lakeside ceanothus	Area specific management directives must include
		specific management measures to address the autecology
		and natural history of the species and to reduce the risk of
		catastrophic fire. Management measures to accomplish
		this may include prescribed fire.

CONDITIONS OF COVERAGE FOR MSCP-COVERED SPECIES PURE WATER SAN DIEGO PROJECT				
Species Name	Common Name	Conditions of Coverage		
Plants (cont.)		Č.		
Ceanothus verrucosus	wart-stemmed ceanothus	Revegetation efforts within appropriate habitats must include restoration of this species. Area specific management directives for the protected populations must include specific measures to increase populations. Area specific management directives must include specific management measures to address the autecology and natural history of the species and to reduce the risk of catastrophic fire. Management measures to accomplish this may include prescribed fire. Any newly found populations should be evaluated for inclusion in the preserve strategy through acquisition, like exchange, etc.		
Chloropyron maritimum ssp. maritimum	salt marsh bird's beak	Area specific management directives must 1) include measures to reduce threats and stabilize populations (e.g., relocation of footpaths, establishment of buffer areas, etc.), 2) address opportunities for reintroduction, and 3) include measures to enhance existing populations (e.g., protect and improve upland habitat for pollinators). There is a federal recovery plan for this species and management activities should to the extent possible help achieve the specified goals. Any newly found populations shall be evaluated for inclusion in the preserve strategy through acquisition, like exchange, etc.		
Cylindropuntia californica var. californica	snake cholla	Area specific management directives must include specific measures to protect against detrimental edge effects to this species, and promote translocation opportunity where appropriate. The Otay Ranch projec GDP and RMP require protection of 80 percent of existing occurrences, and transplantation of any impact occurrences to restored areas of comparable size.		

Appendix B (cont.)
PURE WATER SAN DIEGO PROJECT		
Species Name	Common Name	Conditions of Coverage
Plants (cont.)	L	0
Deinandra conjugens	Otay tarplant	MSCP coverage of this species requires avoidance of populations in the Otay River Valley through sensitive design and development of the active recreations area as described in the Otay Ranch RMP and GDP. One of the seven major populations occurs within an amendment area (Proctor Valley). At the time permit amendments are proposed, strategies to provide protection for this species within the amendment area must be included (proposed take authorization amendments will be subject to public review through CEQA and NEPA processes and take authorization amendments require approval by CDFG and USFWS). Area specific management directives must include specific measures for monitoring of populations and adaptive management of preserves (taking into consideration the extreme population fluctuations from year to year), and specific measures to protect against
		detrimental edge effects to this species.
Dicranostegia orcuttiana	Orcutt's bird's beak	At the time permit amendments are proposed, strategies to provide protection for this species within the amendment area must be included. (Take authorization amendments are subject to public review through CEQA and NEPA processes and require approval by CDFG and USEWS)
Dudleya variegata	variegated dudleya	Area specific management directives must include species-specific monitoring and specific measures to protect against detrimental edge effects to this species, including effects caused by recreational activities. Some populations now occur within a major amendment area (Otay Mountain) and at the time permit amendments are proposed, strategies to provide protection for this species within the amendment area must be included. (Proposed take authorization amendments will have public review through CEQA and NEPA processes and require approval by CDFG and USFWS).
Ericameria palmeri	Palmer's ericameria	None.
Eryngium aristulatum var. parishii	San Diego button-celery	Area specific management directives must include specific measures to protect against detrimental edge effects.
Ferocactus viridescens	San Diego barrel cactus	Area specific management directives must include measures to protect this species from edge effects, unauthorized collection, and include appropriate fire management/control practices to protect against a too frequent fire cycle.

Appendix B (cont.) CONDITIONS OF COVERAGE FOR MSCP-COVERED SPECIES PURE WATER SAN DIEGO PROJECT		
Species Name	Common Name	Conditions of Coverage
Plants (cont.)	L	0
Hesperocyparis forbesii	Tecate cypress	Area specific management directives for the protected populations will include specific measures to maintain or increase populations. Area specific management directives must include specific management measures to address the autecology and natural history of the species and to reduce the risk of catastrophic fire. Management measures to accomplish this may include prescribed fire.
Lepechinia ganderi	Gander's pitcher sage	Area specific management directives must include: 1) specific measures to protect against detrimental edge effects; 2) specific measures to promote increase of populations; and 3) specific management measures to address the autecology and natural history of the species and to reduce the risk of catastrophic fire (management measures to accomplish this may include prescribed fire).
Monardella hypoleuca ssp. lanata	felt-leaved monardella	Area specific management directives must also include measures to protect against detrimental edge effects and uncontrolled access.
Monardella viminea	willowy monardella	Area specific management directives must include specific measures to protect against detrimental edge effects.
Navarretia fossalis	spreading navarretia	Area specific management directives must include specific measures to protect against detrimental edge effects to this species, and must incorporate measures to conserve and maintain surrounding habitat for 1) pollinators and 2) as part of the hydrological system for the vernal pools.
Nolina interrata	Dehesa beargrass	Area specific management directives must include specific measures to protect against detrimental edge effects and management measures to maintain surrounding habitats for pollinators.
Pogogyne abramsii	San Diego mesa mint	Preserve management plan must include measures to: 1) protect against detrimental effects; 2) maintain surrounding habitat for pollinators; and 3) maintain pool watershed areas.
Pogogyne nudiuscula	Otay Mesa mint	Preserve management plan must include measures to: protect against detrimental edge effects; maintain surrounding habitat for pollinators; and maintain pool watershed areas.
Tetracoccus dioicus	Parry's tetracoccus	Area specific management directives must include specific measures to protect against detrimental edge effects to this species.

Species Name	Common Name	Conditions of Coverage
Animals		
Invertebrates		
Branchinecta sandiegonensis	San Diego fairy shrimp	Area specific management directives must include specific measures to protect against detrimental edge effects to this species.
Streptocephalus woottoni	Riverside fairy shrimp	Area specific management directives must include specific measures to protect against detrimental edge effects to this species.
Callophrys thornei	Thorne's hairstreak	Area specific management directives must manage for the host species (Tecate cypress). Management measures to accomplish this may include prescribed fire.
Euphydryas editha quino	Quino checkerspot butterfly	Covered by a separate Recovery Component of the Chula Vista MSCP Subarea Plan. Planned and Future Facilities in the Preserve are subject to facilities siting criteria as well as specific Quino checkerspot butterfly impact avoidance and minimization measures.
Amphibians and Reptile		
Aspidoscelis hyperthyra beldingi	orange-throated whiptail	Area specific management directives must address edge effects.
Phrynosoma blainvillei	coast horned lizard	Area specific management directives must include specific measures to maintain native ant species, discourage Argentine ant, and protect against detrimental edge effects to this species.
Birds	·	
Accipiter cooperi	Cooper's hawk	In the design of future projects within the Metro- Lakeside-Jamul segment, design of preserve areas shall conserve patches of oak woodland and oak riparian forest of adequate size for nesting and foraging habitat. Area specific management directives must include 300-foot impact avoidance areas around the active nests, and minimization of disturbance in oak woodlands and oak riparian forests.
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	Area specific management directives must include maintenance of dynamic processes, such as fire, to perpetuate some open phases of coastal sage scrub with herbaceous components.

Species Name	Common Name	Conditions of Coverage
Animals (cont.)		
Birds (cont.)		
Athene cunicularia	burrowing owl	During the environmental analysis of proposed projects, burrowing owl surveys (using appropriate protocols) must be conducted in suitable habitat to determine if this species is present and the location of active burrows. If burrowing owls are detected, the following mitigation measures must be implemented: within the MHPA, impacts must be avoided; outside of the MHPA, impacts to the species must be avoided to the maximum extent practicable; any impacted individuals must be relocated out of the impact area using passive or active methodologies approved by the wildlife agencies; mitigation for impacts to occupied habitat (at the Subarea Plan specified ratio) must be through the conservation of occupied burrowing owl habitat or conservation of lands appropriate for restoration, management and enhancement of burrowing owl nesting and foraging requirements. Management plans/directives must include: enhancement of know, historical and potential burrowing owl habitat; and management for ground squirrels (the primary excavator of burrowing owl burrows). Enhancement measures may include creation of artificial burrows and vegetation management to enhance foraging habitat. Management plans must also include: monitoring of burrowing owl nest sites to determine use and nesting success; predator control; establishing a 300 foot-wide impact avoidance area (within the preserve) around occupied burrows. Eight known burrowing owl locations occur within major amendment areas of the South County Segment of the County Subarea Plan and the conservation of occupied burrowing owl habitat must be one of the primary factors preserve design during the permit amendment process.
bruneicapillus	coastal cactus wren	specified in the Otay Ranch RMP must occur at the specified 1:1 ratio. Area specific management directives must include restoration of maritime succulent scrub habitat, including propagation of cactus patches, active/adaptive management of cactus wren habitat, monitoring populations within preserves and specific measures to reduce or eliminate detrimental edge effects. No clearing of occupied habitat may occur from the period February 15 through August 15.

Species Name	Common Name	Conditions of Coverage
Animals (cont.)		
Birds (cont.)		
Charadrius alexandrinus nivosus	western snowy plover	Area specific management directives must include protection of nesting sites from human disturbance during the reproductive season, and specific measures to protect against detrimental edge effects to this species. Incidental take (during the breeding season) associated with maintenance/removal of levees/dikes is not authorized except as specifically approved on a case-by- case basis by the wildlife agencies.
Circus cyaneus	northern harrier	Area specific management directives must: manage agricultural and disturbed lands (which become part of the preserve) within four miles of nesting habitat to provide foraging habitat; include an impact avoidance area (900 foot or maximum possible within the preserve) around active nests; and include measures of maintaining winter foraging habitat in preserve areas in Proctor Valley, around Sweetwater Reservoir, San Miguel Ranch, Otay Ranch east of Wueste Road, Lake Hodges, and San Pasqual Valley. The preserve management coordination group shall coordinate efforts to manage for wintering northern harriers' foraging habitat within the MSCP preserves.
Falco peregrinus anatum	American peregrine falcon	None.
Passerculus sandwichensis beldingi	Belding's savannah sparrow	Area specific management directives must include specific measures to protect against detrimental edge effects to this species.
Polioptila californica californica	coastal California gnatcatcher	Area specific management directives must include measures to reduce edge effects and minimize disturbance during the nesting period, fire protection measures to reduce the potential for habitat degradation due to unplanned fire, and management measures to maintain or improve habitat quality including vegetation structure. No clearing of occupied habitat within the cities' MHPAs and within the County's Biological Resource Core Areas may occur between March 1 and August 15.
Rallus obsoletus (=longirostris) brevipes	light-footed Ridgway's (formerly clapper) rail	Area specific management directives must include active management of wetlands to ensure a healthy tidal saltmarsh environment, and specific measures to protect against detrimental edge effects to this species.

Species Name	Common Name	Conditions of Coverage	
Animals (cont.)			
Birds (cont.)			
Sternulla antillarum	California least tern	Area specific management directives must include	
browni		protection of nesting sites from human disturbance	
		during reproductive season, predator control, and specific	
		measures to protect against detrimental edge effects to	
		this species. Incidental take (during the breeding season)	
		associated with maintenance/removal of dikes/levees,	
		beach maintenance/enhancement is not authorized except	
		as specifically approved on a case-by-case basis by the	
		wildlife agencies.	
Vireo bellii pusillus	least Bell's vireo	Jurisdictions will require survey (using appropriate	
		protocols) during the CEQA review process in suitable	
		habitat proposed to be impacted and incorporate	
		mitigation measures consistent with the 404(b)1	
		guidelines into the project. Participating jurisdictions	
		guidelines and ordinances, and state and federal wetland	
		regulations will provide additional habitat protection	
		resulting in no net loss of wetlands. Jurisdictions must	
		require new developments adjacent to preserve areas that	
		create conditions attractive to brown-headed cowbirds to	
		directives must include measures to provide oppropriete	
		successional habitat, unland buffers for all known	
		populations, cowbird control, and specific measures to	
		protect against detrimental edge effects to this species	
		Any clearing of occupied habitat must occur between	
		September 15 and March 15 (i.e. outside of the pesting	
		neriod).	
Mammals	ı	· · · · · · · · · · · · · · · · · · ·	
Odocoileus hemionus	mule deer	None.	
fuliginata			
Taxidea taxus	American badger	None.	